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TWENTY-SEVENTH
QUARTERLY REPORT
OF THE
PENNSYLVANIA
BOARD OF AGRICULTURE,
FOR
APRIL, MAY and JUNE,
1885.

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 Dr. Elbert
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TWENTY-SEVENTH QUARTERLY REPORT OF THE PENNSYLVANIA BOARD OF AGRICULTURE

PENNSYLVANIA BOARD OF AGRICULTURE, 1885.

MEMBERS EX-OFFICIO—His Excellency Governor R. E. Pattison; Hon. J. S. Africa, Secretary of Internal Affairs; Dr. E. E. Higbee, Superintendent of Public Instruction; Hon. J. B. Niles, Auditor General; Dr. G. W. Atherton, President Pennsylvania State College.

APPOINTED BY THE GOVERNOR—Dr. John P. Edge, Downingtown, term expires, 1886; Col. James Young, Middletown, term expires, 1888; V. E. Piollet, Wysox, term expires, 1887.

ELECTED BY COUNTY AGRICULTURAL SOCIETIES.

		Term expires.
Adams,	I. Garretson,	Bigler, 1888
Armstrong,	F. K. Patterson,	Freeport, 1886
Beaver,	A. L. McKibben,	Green Garden, 1887
Bedford,	Jos. E. Noble,	Waterside, 1886
Berks,	J. G. Zerr,	Geiger's Mills, 1886
Blair,	J. D. Hicks,	Tyrone, 1886
Bradford,	H. L. Scott,	Towanda, 1886
Bucks,	E. Reeder,	New Hope, 1887
Butler,	H. M. Wise,	Harmony, 1888
Centre,	E. W. Hale,	Bellefonte, 1888
Chester,	Thos. J. Edge,	West Chester, 1887
Clinton,	Joel A. Herr,	Cedar Springs, 1887
Columbia,	Chandlee Eves,	Millville, 1888
Crawford,	M. W. Oliver,	Springboro', 1886
Cumberland,	C. H. Mullin,	Mt. Holly Springs, 1888
Dauphin,	G. Hiester,	Harrisburg, 1888
Delaware,	Elwood Harvey,	Chester, 1886
Erie,	J. C. Thornton,	Avonia, 1886
Indiana,	A. D. Sutton,	Indiana, 1886
Jefferson,	Jas. McCracken, Jr.,	Frostburg, 1887
Juniata,	Prof. D. Wilson,	Port Royal, 1888
Lackawanna,	H. H. Colvin,	Scranton, 1888
Lancaster,	H. M. Engle,	Marietta, 1886
Lawrence,	D. H. Wallace,	New Castle, 1885
Lebanon,	C. H. Lantz,	Lebanon, 1885
Lehigh,	J. P. Barnes,	Allentown, 1887
Luzerne,	John B. Smith,	Kingston, 1888
Lycoming,	D. H. Foresman,	Williamsport, 1888
Mercer,	Robert McKee,	Mercer, 1887
Montgomery,		
Montour,	M. D. L. Sechler,	Danville, 1886
Northampton,	Asher D. Shimer,	Bethlehem, 1885
Northumberland,	W. C. Packer,	Sunbury, 1888
Somerset,	C. C. Musselman,	Somerset, 1886
Schuylkill,	J. S. Keller,	Orwigsburg, 1887
Sullivan,	L. B. Speaker,	Hill's Grove, 1888
Susquehanna,	J. F. Butterfield,	Montrose, 1886

			Term expires.
Tioga,	J. W. Mather,	Wellsboro',	1886
Union,	Philip Frederick,	Lewisburg,	1887
Venango,	M. C. Beebe,	Pleasantville,	1886
Warren,	Emory Davis,	Sugar Grove,	1886
Washington,	John McDowell,	Washington,	1887
Wayne,	N. F. Underwood,	Lake Como,	1885
York,	W. S. Roland,	York,	1886

OFFICIAL LIST.

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Vice Presidents.

C. C. Musselman.

D. H. Foresman.

J. P. Barnes.

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His Exc'y R. E. Pattison,
M. C. Beebe,
D. Wilson,

N. F. Underwood,
J. A. Herr,
E. Reeder,

G. Hiester,
Dr. J. P. Edge,
T. J. Edge, (*ex officio.*)

Advisory Committee.

Dr. J. P. Edge,

D. Wilson,
Thomas J. Edge, (*ex officio.*)

G. Hiester,

Secretary.

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Thomas Meehan, Germantown.

Pomologist.

E. Satterthwait, Jenkintown.

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Consulting Veterinary Surgeon.

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B. Harry Warren, West Chester.

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Mineralogist.

Prof. F. A. Genth, University of Pennsylvania.

Geologist.

Prof. J. P. Lesley, State Geological Survey.

Stenographer.

Col. H. C. Demming, Harrisburg.

ROADS AND ROAD LAWS.

At the afternoon session of the annual meeting, Thursday, January 29, the President, (Gov. R. E. PATTISON,) having announced that the first business in order was the reception of the report of the special committee on road laws, Hon. C. C. MUSSELMAN, on behalf of the committee, reported as follows:

MR. PRESIDENT: As chairman of the committee, perhaps it would be proper for me to make a short statement before I read this report. About six months ago, at our meeting at Lock Haven, we discussed the road law, and the associate editor of *The Farm Journal* made the present road law and the manner of working out the road-tax so ridiculous that we thought we ought to do something towards bettering the present laws. The member from Blair made a motion to have a committee of five appointed, and insisted on my being the chairman. We have been laboring now half a year; we were to report upon a revision of the existing general road laws at the meeting held at Bedford, which we did. We had a bill there of twenty-two sections, which was read and discussed. We found, by that discussion, that one man would like to have in the bill that which another did not want; and there were some suggestions made to be inserted. The report was referred back to the committee. Now, we, the committee, have thought proper to simmer it down and do the best we can in order to have something that we can present. We have here a draft of an act with but six sections, which is supplemental to the old act. It supplies an immediate want; and in order to have something that we can agree upon and have a chance of having passed by the Legislature, we have this report to make, which has been agreed upon. I would like to say, before I read it, that this bill is in the hands of the legislative Committee on Counties and Townships. I was advised, by a friend of this bill, to have it reported, so that it may get on the calendar; and that whatever amendments, if any, are suggested, they are not to be interlined, but must go on a separate paper. Members are very sensitive upon the question of local laws and special acts, and this bill specially provides that it shall not interfere with any special act or any special legislation.

The report of the committee having been declared open for discussion.

MR. SATTERTHWAIT, of Montgomery. Mr. President, I would request that the gentleman from Somerset, Mr. Musselman, would explain to us what particular defects in the present law it is proposed to remedy by this proposed act. We have a great many road laws, and this is adding one more to the list; therefore fail to see exactly where the improvement will come in. Perhaps the chairman of the committee will explain this point.

MR. MUSSELMAN, of Somerset. It is true that the road law is very lengthy, and yet there is very little of it; we propose in this report to levy a tax upon every male over twenty-one years of age in the Commonwealth. We propose to give some authority into the hands of the supervisors to enable them to collect at least one quarter of the taxes in cash; that they will not be compelled to let every person work out, or lounge out, as at present, his road-tax; so that he, the supervisor, can buy machinery, implements, and tools; all the modern appliances to make roads. These are some of the new features. It is proposed, all through, to make some improvement.

For instance, there is a provision that no levy shall be made over seven mills. We think we can make better roads with less money by having the proper machinery and implements, and by giving the supervisors some power to collect taxes in cash, as is contemplated by this bill, than can now be done. We made this bill as short as possible. We did that for the purpose of sailing clear of objections. We thought if we were to draft a lengthy bill there would be objections; and, therefore, we made the bill as short as possible.

Mr. BULL, of Chester. It seems to me, with great deference to the committee who have spent so much time in drafting this new act, which has just been read, that there are one or two serious defects which that act does not attempt to meet, and which make it very little improvement upon our present road laws. So far as I can see, we could have no better road law than the road law of 1836 if it were carried out, but the defect lies, it seems to me, here. In the first place, I think our system of supervisorships, as now carried out, has proved, during the last fifty or sixty years, a miserable failure. I think we need a business system of conducting and maintaining the roads introduced into our townships. Chester county is overburdened with local laws and special acts of various kinds, and we find that, whether we are acting under the general road law of 1836, or under the special law which allows us to sell out the roads for three years. In either case the thing is a failure; that the second, which was supposed to be an improvement upon the old road law, is little or no better than the first. My own idea would be, which I do not think would add much, if anything, to the expense, is to take out of the hands of the supervisors entirely the maintenance of roads, and that they should be empowered by law to employ a road agent or commissioner for each township, who, for a fixed salary, (say \$500 or \$600 a year,) allowing him to hire so many men, horses and carts, shall keep up the roads in his particular township or district. What is the result of the present road law? We know perfectly well that the office of supervisor is a political office; that, although the emoluments are slight, it is a position of some honor in the community, and men will seek for it, and very frequently obtain it, who are totally unfit for it, and who are not competent, or at least do not prove themselves competent, to keep our roads in proper condition. But I maintain, if one man is chosen by the supervisors, irrespective of his political opinions, then we can place it on a business platform, the same as is now pursued by the Pennsylvania Railroad Company.

Then, again, I think the great trouble is that we have too many township rights. We want a little more centralization. I know that is a dangerous word, especially when looked at from a political standpoint; but, I think, when considering the subject of roads which is a matter of interest, not only to the citizens of two or three townships, but to the people of the whole county, there should be some general supervision, some central controlling power. As His Excellency said this morning, and truly said, no law could be carried out unless there were some central power which alone should see that its various enactments were carried out. I think it is demonstrated beyond any dispute that we do need some similar power in reference to the carrying out of our road laws. You will find, I think, so long as you allow the working of the roads to remain in the hands of the supervisors, and subject to their judgment, the thing will continue to be a failure, as much so as at present.

There is one more aspect of the case. It is suggested that the supervisor shall have the right to raise cash directly of one fourth the amount necessary to be raised. Why should we say that the four fourths should

not be raised by the supervisors just as readily? You know as well as I do what road-making turns out to be, when the supervisor calls out thirty or forty men in the course of a year to work upon them. The roads, year after year, get no better.

Mr. BEEBE, of Venango. This may be considered, and undoubtedly is, a very diminutive bill. It is a road bill. It suggests two or three amendments, not what they ought to be, but what there is the least prospective chance of getting through the General Assembly of Pennsylvania, without which it would be of no avail. I would say to our friend from Chester, (Mr. Bull,) that two years ago, when an effort was being made to revise a road law of Pennsylvania, the delegation from Chester county, a county which is considered very intelligent, influential, and well-posted upon general affairs, appeared at Harrisburg and protested against any innovation upon the laws of Chester county; that they had laws infinitely superior to anything that it was proposed to present, and crushed out, I might say, any efforts on the part of Pennsylvania for any revision of the road law, so that this is placed upon the simple proposition of endeavoring to secure certain things. Now, I wish to say that so far as Venango county is concerned, it is of no consequence, because they are able to purchase all this machinery, have done so, and have been using it for the last fifteen years. I was down through one of the eastern counties, near the city of Philadelphia, and I saw twenty men and boys at work. One had a shovel and another a pick. One had a horse and cart carting dirt. Others were smoking, and some were lounging, and some were discussing politics. I said to the friend I was riding with that I could take a road-scraper and a team and make three times as much road as that whole force was making, and put it in as good, if not better, order. Now, the general road law does not allow the purchase of road machinery. That is the main thing that this bill proposes to meet. The main point is to allow machinery to be used.

Take an improved road machine; put your road in order once, and (I speak from experience) thereafter your roads can be kept up, in far better condition than now, by a tax of half a mill. So that, limited as this bill is, it is an improvement upon the old law by permitting the use of the fund for that purpose.

Our friend from Chester county said: "Why not collect and put the whole four fourths in?" Why, if you can get through a levy of one fourth, bless you; it will be a wonderful improvement! The only doubt about it is, *can* you get it through? Can you get it through to the extent of collecting even one fourth? It has not been long ago that a taxpayer in Bucks county objected to paying his tax because he had not been "warned out," or something of that kind, and the Supreme Court decided that any man could work out his entire tax, and that he could not be required to pay a cent of money until he had first had that opportunity of working out his tax.

That was the decision of the court, and that is what occasioned the first suggestion as to any change in the road law. Now, briefly, this bill proposes nothing but a modification to enable these two or three things to be done, and is confined to these few things simply because there is no prospect of getting anything more. For my own part, I would like to see a road law in the State of Pennsylvania covering every condition and requirement—an enabling act, broad in its provisions, and covering every case, from the poorest tract of country down to grading and turnpiking. The best mode would be an enabling act, containing a clause by which any township or community could avail itself of any provision of it. We have

been introducing some such legislation in Pennsylvania—an enabling act containing a local option clause. We have a sheep law by which we can tax dogs for the protection of the owner of sheep, which never could have been passed if it had not been for this local option clause, which permitted each county, at a general election, to take a vote upon it. Now, I would like to have a general road law prepared in this way, with the broadest possible enabling act, to allow each community to avail itself by vote whether it will or will not; an enabling act adapting itself to all the conditions and situations in the State. When the Constitutional Convention of Pennsylvania did away with special legislation by reason of its abuse, they did away with legislation that was of immense beneficence in many respects. Many of our best institutions are the result of that local legislation, but it became so gross, so much abused, that the cry went forth to do away with it entirely. And yet you see that this broad want in regard to a general law is so prevalent that you observe, in the Legislature of Pennsylvania, time and again, a general law put through to cover some special case in order to dodge the idea of special legislation. It pervades a broader sphere, and I have no hesitation in saying that the intention of the framers of the Constitution of Pennsylvania was violated by the decision of the Supreme Court by which the classification of cities of the first, second, and third classes, &c., was made in order to adapt legislation to the circumstances of the situation.

I would like to see a road law containing features by which the different sections of the State, according to their wants, could adopt any one of the provisions of the bill by virtue of the local option clause attached to it. Without that, any legislation attempted to be secured further than the privilege of levying a portion of the tax to purchase machinery, and to effect these little changes, I think it is useless.

I design to offer a single amendment. Our friend in drafting this bill has a sentence like this: "And in case of storms and floods the public roads and bridges are in such condition as to interrupt the public travel, and the amount first levied shall not be sufficient to keep the roads in necessary condition and repair." Suppose these roads were not in condition and repair by virtue of the seven mills, why should it take a flood in order to levy the other three mills? It is not necessary at all. Why not have the levy? The law requires that the supervisors shall keep the roads in good condition; and they are subject to indictment if they do not do so. Why not strike that out? I move to amend the bill by striking out "and in case of storms and floods, the public roads and bridges are in such condition as to interrupt the public travel, and the amount first levied shall not be deemed sufficient to make the necessary repairs," and substitute therefor the words "and when the seven mills so levied are duly expended, and said roads are not in good condition and repair, then they may levy three mills more."

Mr. MUSSELMAN. I should be sorry to see this amendment adopted for this reason: It certainly cannot better it; and we can scarcely amend this bill, as it is now in the hands of the committee of the Legislature. Whatever amendments are made, must be put on separate paper. They cannot be inserted in this. Besides that, I received a copy of a bill from a gentleman who is now in the House. Bills were sent me from different sections of this State; the committee corresponded with practical road-makers and supervisors; the committee consulted with the best men in our section of the State; and I had a suggestion from the gentleman from Chester, who has just spoken.

Mr. BULL. We adopted everything that we thought was practicable. I

cannot say that I am very particular about that amendment offered by Mr. Beebe; only I am very slow to adopt anything here that is going to burden this bill, and that is going to make it look as though it were torn to pieces. I do not really see the necessity of doing that. If it can be introduced without spoiling the bill, I shall not be particular.

Mr. MUSSELMAN. I would like to say to the gentleman from Chester, (Mr. Bull,) who suggested that the road commissioners be appointed by the supervisors, that supervisors are a political body, and that, in order to get the matter out of the hands of these political bodies, the road commissioners should be appointed by the supervisors to carry out these road laws; that it would still increase that political power which he is anxious to avoid, because, if you have a supervisor of your political faith in your township, he will appoint a man of his faith, which is but adding to the evil. I say you can gain nothing in that direction.

I am very sorry that I have to oppose this amendment as not being necessary. I would rather that the three mills be stricken out. I think we ought to leave the matter of the three mills as it is there in the bill now.

Mr. BULL, of Chester. I would like to say, in answer to what Mr. Musselman has just said, that my idea is that these commissioners ought to be at least trustworthy enough to be entrusted with choosing a competent, practical business man, who shall be paid a salary, and that, so long as he shall be faithful in the discharge of his duties, he shall remain in his place, whether he be a Democrat or a Republican, and that he shall be placed under bond and made responsible. And the moment that he is found to be unfaithful in the discharge of his duties, then the question of another officer taking his place shall be considered.

Mr. SATTERWAITE, of Montgomery. I was in hopes that this Board was prepared to remedy this matter of the working out of taxes. I was in hopes that we were prepared to reform that altogether. In our part of the State that is what we would like to have; but it seems to me, from what has been said here, that there is no use of talking about that; that the State at large is not prepared to go that length, or anything like it. The idea of collecting one fourth in cash is simply nothing.

As to our requirements, we have machinery, and we do work in spite of the law, by machinery. We have no use at all of this law of working out the taxes, because we cannot do it, making the roads as we do by machinery. I am afraid that our people would not like the idea of being restricted to a tax of seven mills. We find that it pays to macadamize the roads, and our people would not like to be restricted to a tax of seven mills, because sometimes we want to spend a great deal more than that. We have learned that it pays to make good roads, no matter what they cost. Everybody says: "If you will make the roads good, we do not care for the tax." It is when you have nothing to show for the money expended that they complain—which is the objection to this working-out system. From the discussion that has taken place here, I see that our State is not prepared to do us any particular good. I see that we will have to go ahead, in spite of the laws as they now stand. We have gotten along without any trouble so far; but I do not know when the trouble will come.

A gentleman who is a practical surveyor and an excellent business man, who does a great deal of business in our neighborhood, hearing that I was going to attend this meeting, and that this question of the improvement of the road laws would be discussed, wrote to me this communication, which I think is worthy of being heard and considered.

With deference to the gentleman who wrote this, I will offer this resolu-

tion. I know that a provision, such as this, would be a great public advantage. I offer it as an amendment.

Mr. MUSSELMAN. Mr. President, in order to save us the trouble of going any further into this matter, I accept Mr. Beebe's amendment, though I do so with great reluctance. I accept the amendment to settle this matter. I do hope that the bill will not be mutilated. If the bill cannot pass through this body without being mutilated, let us kill it at once. If it is approved by this Board, let us pass it, but if it is to be mutilated by amendments, then I would rather have it killed here.

The PRESIDENT. (Gov. R. E. Pattison.) The amendment of Mr. Beebe is accepted. Therefore, the original bill comes before the Board with the amendment of Mr. Beebe.

Dr. J. P. EDGE, of Chester. I think that the present general road law is sufficient for all practical purposes, with the exception of the restriction in regard to the collection of taxes. If it were in the power of the supervisors to collect enough in cash to supply themselves with improved machinery, the objection to the working out of the taxes on the part of citizens would, to a very large extent, be removed by the economy that would result by the use of improved machinery. In other words, the machinery would do what men do now; it would only be in those cases where turn-piking would be undertaken that citizens would come in as helpers to any great extent. I think that the amendment proposed is insufficient in that feature; that it restricts the power of the supervisors too much in the levying of taxes. I have a word of explanation to say in reply to my friend, Mr. Beebe, as to Chester county. The improvement of the roads in Chester county has been marvelous in the last five years, in the southern part of the county more especially, in consequence of the introduction of improved machinery. As a consequence, several townships have had their local laws repealed, and others are here asking this Legislature to repeal their laws.

Mr. MUSSELMAN, of Somerset. I hope that you will allow me a good deal of latitude in the discussion of this bill. It must be remembered that the valuation of this great State of ours is increasing continually. In the section of country I come from, I do not think we ever levy a tax above seven mills, yet the valuation is going up all the time. The roads are about made. We are not having very many new roads constructed, and I think that seven mills are amply sufficient. I scarcely know what Mr. Beebe's amendment is. I accept it because I want to satisfy all the opposition that I can.

Mr. BEEBE, of Venango. My amendment says that after the levy of seven mills has been expended and the roads are not in good repair, they can levy an additional three mills.

Mr. MUSSELMAN. Mr. President, the collection of one fourth of the taxes in cash is to provide for the modern appliances of making roads. This bill is the result of correspondence with the best men; we have consulted not only with lawyers, but with practical roadmakers and supervisors, who agreed almost unanimously that something of this kind ought to be adopted. For that reason we have made it very brief, so that it should not meet with opposition. Now, to get all these amendments and proposals in here is absolutely out of the question.

Mr. FULLER, of Crawford. This subject is one to which I have given a good deal of attention. I have had correspondence not only with gentlemen in our own State, but with a great many in other States. There is not, so far as I am able to discover, a perfect road law in any of the States to-day. It is, we might say, the great necessity of the times. It is a thing

which is sure to come, but it is going to require a great deal of study and application in order to accomplish it. I had hoped, so far as this Board is concerned, that you were ready to join with us in our association in recommending an entire change in our present road law. The recommendation which is made by this committee is merely supplementing our present law. It is very good as far as it goes, but the time is coming, and must come, and is very near, when we shall have to adopt a cash basis for the working of our roads instead of the present system.

I am very free to say that I would like to see a committee appointed by this body, and we will appoint a committee from our association (The State Dairymen's Association) to take this matter up, and give it two years of consideration. I have been at work at it for five years. We all know that it takes a great many years to accomplish a reform of this kind. I believe that by giving it careful attention—by taking advanced ground—we will eventually get a road law that will be agreeable to this State.

I am pleased to acknowledge that this suggestion of the committee is an improvement upon our present law. But the trouble is that we do not take advanced ground in the matter, and it is necessary for the accomplishment of an object of this kind for us to take that ground; and it is through these organizations that we are going to be able, eventually, to effect that change and improvement. Take the present law. All the time that law was enacted, most everything was paid in labor. You can accomplish more than half again with cash than you can accomplish under the present system with the full amount of taxes. I cannot find any one farmer who would not be willing to pay one half the tax in cash, and work under a cash system.

The working of roads in the early spring, in June, is all very well; but it is the little break in the roads that causes all the trouble. You want the same attention given to the roads that this city gives to its streets. When there is a break in the road you want it repaired at once, and not left until the next spring. I wish, indeed, that we could take advanced ground in this matter, because we are going to take that stand in Northwest Pennsylvania. We will not be satisfied with any half-way measures, and, of course, we will endeavor to render all the assistance in our power to obtain something better than we now have.

Mr. McDOWELL, of Washington. I was not present at the time this bill was read, and, perhaps, I have not got the text in my mind exactly. I wish to state, however, as a member of the Committee on Legislation, appointed by this Board to attend the meeting at Bedford, that I could not be present at that meeting. This matter was taken out of that committee's hands, and put into the hands of a special committee; and that committee reports the bill that I now hold in my hand. This, I understand, is merely a supplemental bill to the old law—that we need a road law. I think we will all admit that we can never support any law until the people are educated up to it. That has been my observation with all the laws we have. That the old law is defective beyond a doubt, that it is abused, I think all will agree.

Now, the valuation of property in our county (Washington) is estimated at seventy dollars per acre. It would seem that seven mills would be an enormous tax. That, added to the county and school tax, would require us to sell our property, and to get out of the State as soon as possible. But, Mr. President, we do not want to move away. We are loyal to old Pennsylvania.

I wish to say something as to the abuse of the old law. I agree with my friend, (Mr. Fuller,) who has just taken his seat, as to this labor tax, and

that people had no means of marketing the products of their farms by which they could get money. I have been through that school and I am in it yet. It is abused in this way: In several of the townships of my county—in nearly all, I might say—it is a political man who will be supervisor of roads. Now, let me tell you what I have perceived from my own observation—I have the proof in my pocket, and can produce it if necessary—that when we come to work out the tax under the old law, the supervisor, who does not own a foot of land, will call just so many hands to work on the roads, say four or five, they receive two dollars a day, and we have always paid money to buy machinery. It is always making a bone of contention, and has ever since I can recollect—the getting the privilege of working out taxes. That is the way they draw their two dollars per day. The idea of taking four or five hands and putting them on the road with one or two teams, and putting mud on year after year is simply waste of time and money. There is nothing beneficial or lasting about it.

That has been the difficulty we have had with the old law. Now, whilst I think that this would be an improvement, yet I wish that there had been a clause in it fixing the wages that the supervisor is to get the same as the wages of the laboring men. Now, while this is not just the law that we would desire, yet I think I would favor it. We had this matter under consideration in our own county; we called the citizens together, and we spent a week in framing what we thought would suit us; and we hoped that the other counties would not think that it was an innovation upon their rights, but that we had the good of the whole State at heart.

Mr. MUSSELMAN, of Somerset. I would state, in answer to the gentleman from Washington, (Mr. McDowell,) that the main part of this bill was taken from the bill that was framed in that body in Washington county which he has just named; and the bill that was discussed at Bedford was almost *verbatim*. We found that the cash tax would not carry, and then we thought we would make something like a compromise of the two extremes and have at least one fourth paid in cash, in order to get the necessary machinery to make the roads.

THOMAS J. EDGE, (Secretary.) Mr. President, during the eight years that I have been Secretary of the Board, I have noticed that the road question comes before the Legislature at every session; that after considerable time has been expended in committees and by both branches of the Legislature, the subject is left as it was before. I do not think, sir, that we will ever get a general road law which will suit all sections of the State. Some States, smaller than ours and with less diversified territory, have enacted laws which are satisfactory to the whole of the State to which they apply; we may readily draft an act upon which Chester, Montgomery, and Bucks can agree, but it would not prove at all satisfactory to Pike, Potter, or Cameron; the surroundings are entirely different; one county, because of its close population and large amount of travel, can go to an expense per mile which would deplete the treasuries of other counties. Mr. Satterthwait, of Montgomery, hauls large amounts of farm produce to Philadelphia and well knows the value of good roads, and knows that the amount of his load is gauged by the condition of the roads over which he has to haul. He does not object to ten or fifteen mills road tax, provided it is properly and fairly expended. In his district the increase of a single mill means a large amount, and a seven mill tax will give a vast revenue for permanent repairs and improvement; but in Cameron or Potter a seven-mill tax will not accomplish the same results. I have noted that all general laws meet with opposition from two directions: first, from such sections as already have good local laws and do not wish them interfered with; second, from

the thinly-settled counties which cannot afford the taxation often called for by the act. We can avoid both of these objections by making the act only applicable when a vote of the county shall have, by accepting its provisions, made it binding. We will then disarm both classes of opposition, and may incorporate in the new act any provision which may seem applicable to the opposite extremes of the two classes indicated. In my county (Chester) there are always enough of non-resident taxpayers who will pay their tax in money to obtain all of the improved machinery needed. We may as well accept it as inevitable that the "coming road" will be mended by improved machinery, by which two or three men and two horses will accomplish as much as twenty men under our present system. It will come in all the thickly-settled counties first, and afterwards in the others. After a road-bed has once been prepared for the use of such machinery, the work becomes much lessened and the cost very much reduced. In my own township (New Garden) the roads are divided into half mile, or less, sections, and sold out at public sale, once in three years, to the resident of the township who will contract to do the necessary work for the least money. In theory this plan is correct, for the man who lives close by the road can often, by close watching, put on a few shovelfuls of earth, when, if neglected for a few days, it would require as many cart loads, but in practice it results in "whipping the horse that will pull," or in other words, it is too often the case that the man who will mend his section has to do it well, while the one who is careless gets off with very little work. For these and other reasons, I have very little faith that the features of the act as proposed by our committee will meet with the approbation of a majority of both branches of the Legislature, but as the committee have expended considerable time and labor on the work, I would advocate a trial, and see how it will result. Our friend from Somerset is tenacious about the addition of any amendments, but he will not find the members of the Legislature as careful of his wishes as this Board has been. They have their own ideas in relation to the matter, and will not be slow to engraft them on the bill, and when they are through with it, I very much doubt whether its friends will recognize it.

Mr. McCracken, of Jefferson. In Jefferson county we work out our tax as the law requires or permits, if we cannot help it. I believe that, as has been suggested, this proposed law may not be just what we all desire, but give us, in Jefferson county, one fourth of our taxes in cash and let our supervisors buy improved machinery, and in three years our people would be convinced that it is better to pay all of their tax in cash.

Dr. ATHERTON, of Centre. I understood Judge Musselman to say a few minutes ago that this bill which he has produced has already been presented to the House. I wish to suggest, if that be the case, that we can only return the bill, suggesting such changes as have been already adopted. I mention that as a matter of form, so as not to take the matter of legislation out of the hands of the properly-constituted committee and cut it up ourselves. I wish to add my indorsement of what has been said by the member from Jefferson county. Some localities have what they need. Others ask for just this kind of legislation, and, if it proves by experience that it is adapted to the wants of some counties, in a very short time those or similar laws will be availed of for the different parts of the State; and then will come the time for such a comprehensive scheme as Mr. Fuller asks for, and such as we will all approve.

I should be very glad to vote on a motion for the appointment of a committee to act with the State Dairy-men's Association, or with any other as-

sociation, in the consideration of a general law to be presented, which might be acceptable to the Legislature of the State.

Mr. BEEBE, of Venango. When Mr. Musselman reported this bill he did not inform me that, after being prepared, it was pushed into the Legislature and then brought to the State Board. It strikes me that he got rather a good purchase on it to prevent us from interfering with it by taking this course. The road laws were up for discussion, and what I deemed to be about all that this Board could do was to express its views upon the subject generally, and upon this bill in particular, and to say whether they approve or disapprove giving their sanction to it, but without having any intent of putting it into the Legislature as the bill approved by this Board, except to pass an opinion as to what was already before the Legislature, and upon which they were acting and receiving the views of the people from all parts of the State.

Mr. MUSSELMAN. Mr. President, I think I told Mr. Beebe, but I know I told the other members of the committee, that I was advised by the friends of this bill, and those who have this matter under consideration, that that is the only way we could hope to get this bill through; that is, to agree upon a bill and have it put on the calendar; that if we could get it out of the committee and discuss it, which we have done, and have it approved as we might see fit, we might get it through. So it is here in that shape. It was gotten out for the purpose of discussing it. If we wish to condemn it, we can vote it down.

Mr. MORGAN, of Somerset. Mr. President, as a member of the Legislature, and as a member of the Committee on Counties and Townships, I would say that there seems a misapprehension on the part of some here. This bill was presented and read before the Committee on Counties and Townships at their meeting, and the hour of adjournment having arrived, it was postponed without any action being taken at that time. Afterwards, by request, it was brought back to this committee. Now, in the absence of any action having been taken on it, I do not think you could ask your chairman, who has presented this bill, to send it back with any changes or alterations in it. Whilst you all know that bills are often changed in committee before they are presented to the Legislature, I would say that any suggestions that might accompany the bill in writing would be acceptable. While Mr. Morgan, the gentleman who took this bill out, would not take the responsibility of returning it with any changes or alterations in it, any suggestions in writing that might accompany it from this Board would receive consideration.

Dr. ATHERTON. What is now before the Board?

The PRESIDENT, (Gov. R. E. Pattison.) The report of the Committee on Roads is now before the Board. It is under discussion, with Mr. Beebe's amendment, which has been accepted. Now the original report with the amendment, as accepted, is before the Board for discussion.

Dr. ATHERTON, of Centre. I would make this motion, that the Board approve the provisions of the bill which has been presented here by Judge Musselman, and recommend its adoption, with the amendment suggested by Mr. Beebe and accepted by Judge Musselman. That would cover the whole ground; that the Board approve the provisions of the bill, and recommend the adoption of the amendment.

Dr. BARNES, of Lehigh. Mr. President, I would like to know what the minutes of the meeting held at Bedford are as regards the committee on roads.

The SECRETARY. The minutes read as follows:

"The special committee on roads, consisting of Messrs. Musselman,

Reeder, Beebe, Mather, and Rhone, reported a draft of a general road law, which, after discussion by Messrs. Musselman, Harvey, Beebe, Barnes, and Foresman, was referred back to the committee for reconsideration and presentation to the annual meeting.

"Mr. Reeder, of Bucks, offered the following as an amendment to the general road law:

"*Resolved*, That it is the sense of this Board that section thirty-four of the general road law be so amended as to read, after the words 'may direct,' so as to give such persons full opportunity to work out one half of their respective taxes, and that the remaining half of the money collected may be expended in the purchase of such improved appliances as may be found necessary to make and keep the roads in good repair.

"Which, after discussion by Messrs. Reeder, McKee, Dr. Edge, Musselman, and Secretary, was referred to the special committee on roads."

Dr. BARNES. Mr. President, I would like to know by what authority that bill has gone before the Legislature.

Mr. MORGAN. Mr. President, it might be in place for me to answer that question, as I presented the bill before the House. That was done for the sole purpose of getting it on the calendar. I expected to get it on the calendar and have the bill printed, and have perhaps fifty copies for the use of this Board. I failed in getting that done. If that had been done, of course, any amendment that might have been suggested by this Board could have been put in and another reprint had of the bill. There was no intention of any trick that I know of. I think the thing was done squarely, from beginning to end.

Dr. BARNES. Mr. President, I think that the action that has been taken in this matter has been anticipating the action of this annual meeting on that subject, and I do not think any one member of this Board could, with authority, as emanating from this Board, present an act or a law of that kind to be enacted by the Legislature without first getting the sanction of this board for that purpose. Of course, no action has been taken upon the bill before the Legislature up to this time, and therefore it does not hamper us in any way. It throws the matter back upon our hands to act as we see proper, and I hope no action of that kind will be taken without authority emanating from this Board to proceed to that extent.

THOMAS J. EDGE, Secretary. Mr. President, I would suggest that the difficulty probably exists in a misunderstanding of the matter. Judge Musselman, as chairman of our special committee on roads, reports from his committee a draft of a road law; now, there is nothing improper in the fact that Mr. Morgan, a member of the Legislature, has read in place the same bill; this was done for the purpose of getting the bill into a front place on the House calendar; the bill not having been acted upon by the Committee on Counties and Townships (to whom it was referred by the House) has not with it the recommendation of the Board; it is true that our Board cannot amend the copy which is, theoretically, in the possession of the committee alluded to; yet, through any member of that Committee, (Mr. Morgan, for instance,) any amendment suggested or indorsed by this Board can, if it meets with the approbation of the House committee, be inserted before it is reported back to the House "with amendments," and, in effect, it would be the same as if it had been amended in this meeting. The sole object in having it read in place in the House before the meeting of this Board was (no doubt) that it might secure its place on the calendar, and then be amended or changed in committee afterward. This is, in effect, Judge Musselman's explanation, and I think should be accepted by the Board in good faith.

On motion of Dr. ATHERTON, seconded by Mr. SMITH, the bill, as amended, was indorsed by the Board, and Hon. C. C. Musselman appointed to present the amendments to the House Committee on Counties and Townships.

NOTE BY THE SECRETARY.

If the correspondence of the Board can be accepted as a criterion of public sentiment in relation to the manner of repairing roads and collecting the tax to pay the expenses of the work, we are forced to the conclusion that the main cause of dissatisfaction is to be found in the thirty-fourth section of the act of April 15, 1834, which provides as follows: "That before issuing the duplicate and warrant for the collection of road-taxes, it shall be the duty of the supervisors of every township to give notice to all persons rated for such taxes, by advertisement or otherwise, to attend at such times and places as such supervisors may direct, so as to give such persons full opportunity to work out their respective taxes."

In *Miller vs. Gorman* (38 Penn. St. R., 39) it was decided that "the opportunity to work out the taxes is a condition precedent to the issuing of a warrant for their collection. Where they are assessed against non-residents, notice may be given by advertisement, but the tenants must be permitted to work out the taxes, if they offer to do so." In *Childs vs. Brown Township* (40 Penn. St. R., 332) it was decided that "supervisors can make no contract, the effect of which must be to deprive taxpayers of the privilege to work out their taxes."

Our correspondence plainly indicates that the objection to this section arises from a strong and growing desire, which exists in nearly all of the more thickly settled counties, for the adoption of an improved method of repairing the roads by the use of labor-saving machinery, by which three or four horses can be substituted for ten times as many men, and at great saving in the actual outlay. If (as the law now stands) the whole of the tax levy may be paid in labor, it becomes difficult to obtain the necessary machinery and also do away with the manual labor, which the taxpayer may claim as his right, but to the serious loss of the township funds. During the past ten years, each session of the Legislature has witnessed one or more attempts to secure such legislation as will provide for, at least, a portion of the road-taxes in cash and the balance in labor. Before the passage of the new Constitution found vent by the enactment of special legislation, which, at least, in part, relieved the pressure, but since the adoption of the Constitution this has been cut off, and those sections not already relieved by special legislation are applying for general legislation, which shall accomplish the same result.

In 1859, the township of West Marlborough, in Chester county, obtained an act from which we quote the following sections as particularly applying to the branch of the road question alluded to: (See P. L., 1879, pages 39 and 40.) "Section 3. That it shall be lawful for the taxable inhabitants of said township of West Marlborough, at their next election for supervisors of the public roads, to elect three suitable persons as supervisors, one for one year, one for two years, and one for three years, and one person annually to serve for three years, any two of whom shall constitute a quorum to do business, and whose duty it shall be, within fifteen days after their election, and every five years thereafter, to lay off and divide the public roads and highways in said township into sections, not exceeding one mile in length, which they shall number and describe in the road-book of said township. They shall also distinctly specify therein what they deem necessary for the improvement and keeping in good repair the said public roads

and highways; and when the supervisors shall have so laid off the public roads as aforesaid, they shall, within three days thereafter, give public notice, as provided in section first of this act, designating the time and place for the taxable inhabitants of said township to meet, at which time and place it shall be the duty of the supervisors to attend and sell out at public sale, for a term of five years, to the lowest bidder, the said roads, as described in sections, one section at a time, according to the terms therein specified, until they are all sold or disposed of, to be kept in repair for the said term of five years: *Provided*, That if any section or sections of said roads shall remain unsold, on account of no bids having been made for the same, it shall be lawful for the said supervisors thereafter to let out such section or sections at private contract: *Provided*, That the said supervisors shall not be directly or indirectly interested in taking or keeping in repair any section or sections so let out as aforesaid: *And provided also*, That not more than one fifth part of the amount of such sales and contracts shall be paid to the respective purchasers and contractors, in any one year, except in such cases as are hereinafter provided for." Section four provides that each purchaser shall sign his name to the contract in the road-book of the township, and shall give satisfactory security to the supervisors for the faithful performance of his contract. Section five prescribes for the removal of small stones and other items in the repairs of the road; limits the width of the road-bed, &c., &c.; it also provides that if the section is not kept in proper repair the supervisors shall give the contractor six days' notice of such need of repairs, and, if not properly repaired in that time, it becomes the duty of the supervisors to employ hands, and, after putting the road in proper order, charge the expense to the account of the contractor. Since the date of this act, and previous to the adoption of the new Constitution, the essential provisions of this act (with some modifications) were extended to other townships in the same county and also to adjoining townships in other counties; by the act of April 9, 1870, similar provisions were extended to the counties of McKean, Bedford, and Venango.

The theory of the act was that each section would probably be purchased by an adjacent taxpayer, who could, by his proximity to the work, keep it in proper order at a much less expense than a more distant supervisor, whose duties extended to many other sections. In some case, the provisions of the act have been repealed, and the work has gone back to the principles of the act of 1834. In all of the localities which have adopted these or similar provisions, it is safe to say that at the present time the people are ready for a still further improvement of their manner of repairing roads, and, so far as we have been informed as to their wants, all ask for the payment of a fixed proportion of the tax-levy in cash. While different sections vary in the amount which should be thus paid, we find the minimum to be twenty-five per cent., and the maximum to be the whole amount. So far as noted, it holds good as a rule that the more thickly settled the district the larger the proportion to be paid, desire to be paid in money.

The desire now is for some system that will provide the law and the means by which the highways may be permanently improved, and that this improvement should, as soon as practicable, extend to all of the roads in the township; a majority of the tax-payers who are the most benefited by good roads are willing to pay an increased tax-rate if they are assured that it will be economically expended and properly applied. In many sections the want includes the construction of Macadamized and Tel-

ford roads for the main lines of travel, and proportionate improvement on all other side roads.

Acting upon this opinion, as expressed by its correspondence, the Board of Agriculture appointed a standing committee, to whom the whole topic was assigned. This committee has presented several partial reports, and at a recent meeting a special committee on roads (with Hon. C. C. Musselman, of Somerset, as chairman,) was appointed by Governor Pattison. At the last annual meeting this committee reported a draft of an act which was supposed to cover the need of a majority of the sections, which, through our correspondents, had made their wishes known. After the addition of an amendment by the members present at the annual meeting, the draft was presented to the Legislature with the indorsement of the Board. After its passage through the House committee the bill was as follows:

A SUPPLEMENT

To an act entitled "An act relating to roads, highways, and bridges," approved the 13th day of June, A. D. 1836.

SECTION 1. *Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same,* That on or before the second Monday of March of each year, the supervisors or road commissioners of the several townships of this Commonwealth shall meet and determine the amount of road-tax that they deem necessary to make, build, and put in good repair the several roads and bridges of their respective townships and boroughs for the current year, which amount shall not exceed seven mills on every dollar of valuation so made, including one dollar in cash, or one day's work, which every male taxable in this Commonwealth over twenty-one years of age shall pay or work, or caused to be worked; and when the seven mills levied have been duly expended, and said roads are not in good condition and repair, and the amount first levied shall not be deemed sufficient to make the necessary repairs, the said supervisors, street or road commissioners may levy an additional tax not exceeding three mills on every dollar of valuation.

SECTION 2. It shall be lawful for supervisors, road or street commissioners, or either of them, to collect one fourth of all taxes on their duplicates in cash, if deemed necessary or best by them, or either of them.

SECTION 3. The supervisors, road or street commissioners, or either of them, shall have power to purchase and procure, for the use of their respective townships, boroughs, or districts, such materials, tools, implements, and machinery, and employ such laborers and mechanics, as they may deem necessary and best, at fair prices and fair wages, to use or work on their respective roads, culverts, or bridges in their respective townships or boroughs. And it shall be the duty of supervisors, road or street commissioners, to keep all tools, implements, and machinery belonging to their respective districts in their care, and surrender them to their successors in office in good condition.

SECTION 4. It shall be the duty of supervisors, road or street commissioners, or either of them, to keep all the roads and bridges within their respective townships or boroughs in good and substantial repair; the bed of the road not to be less than fourteen feet wide, raised in the middle, unless impracticable, and sloped gradually to the sides, where ditches or drains shall be kept open of sufficient depth and width to carry off water; to keep all loose stones from the roads, and to make and repair all roads as far as practicable during the spring and summer seasons. And further, the super-

visors of townships or boroughs, where a bridge is or has been built by the county commissioners, shall fill up between the wings of the abutments and the ends of the bridge, and gradually sloping back, making the grade in no case to exceed five degrees from the floor of the bridge.

SECTION 5. Nothing in this act shall be so construed as to prevent supervisors, road or street commissioners, or either of them, from letting or giving out by contract the making and repairing of roads or any parts of roads, culverts, or bridges within their respective townships, or boroughs, or districts, if by them, or either of them, deemed best for the public good, subject to the foregoing provisions of this act: *Provided, however,* That nothing in this act shall be so construed as to relieve supervisors, road or street commissioners, or either of them, from their responsibility for the making and keeping in good repair such roads or parts of roads so let by contract.

SECTION 6. All laws and parts of laws inconsistent with the provisions of this act are hereby repealed: *Provided,* That nothing in this act shall be deemed or taken to repeal any special or local act now in force relating to roads or bridges in any of the counties, townships, or boroughs in this Commonwealth.

This act, as presented to the Board by its committee, is a modification of the act of 1856, applying especially to Crawford county, which provides as follows:

"SECTION 1. That the supervisors of the several townships in the county of Crawford be and are hereby authorized to assess and collect a tax for road and bridge purposes, such as they may deem necessary, said tax not to exceed one per centum on the dollar of valuation, and if the said supervisors shall deem it necessary, they may collect a part of the tax so assessed in money: *Provided,* That the part so assessed shall not, in any one year, exceed three mills on each dollar of valuation."

The act of 1854, applying to the same county, provides as follows:

"SECTION 4. That the supervisors shall lay such tax on the property so assessed as they may deem necessary for road and bridge purposes for the current year, not exceeding one half per cent on every dollar of valuation so made; but if the same shall be all expended, and unavoidable repairs shall be required, the supervisors may raise an additional sum for that purpose, not exceeding one per cent. in any one year in the whole, and no taxable shall be assessed with less than one day's work per year, and if the supervisors find it necessary, they may each year collect a part of the tax, not exceeding ten per cent. thereof, in money, and no supervisor or road master shall hereafter create any debt against the township by working more than the amount of his duplicate and assessment on the roads, without the consent of township auditors first had and obtained."

A NEW ROAD LAW.

By Rev. WILLIAM L. BULL, *Whitford P. O., Chester county, Pa.*

I was much pleased to see in the *Philadelphia Press*, of June 30, 1884, an editorial headed "Country Roads," from which I quote the following: "The dirt shoveled upon the country roads by the supervisors' directions has been washed away by recent rains. This happens with great regularity every spring. While the present system of road-making is continued, the bad roads are likely to continue. We go on year in and year out, like

the spiders which spin webs within reach of the house-keeper's broom, throwing loose dirt on the roads, only to see it washed away inside of a few weeks, and for the rest of the year repairs are made to vehicles, harness and horseflesh." * * * * The counties need improved roads more than Philadelphia needs better streets." A comparison, by the way, to any one familiar with the condition of the latter, as uncomplimentary, and a criticism as severe, if deserved, as could well be imagined.

The writer hears almost daily complaints regarding them, which are usually laid at the supervisor's door on the ground of his unfaithfulness or ignorance.

Whether these accusations be just or not, there must be something radically wrong when so little, if any, improvement is made from year to year, even in a day when road machines are so common and traveling in light vehicles so greatly on the increase, and the supervisor owes it to himself for his own vindication, as well as the township he represents, to put forth every effort to have some means adopted by which the taxpayers shall be convinced that he is doing his duty, and that they shall be repaid the taxes they are annually mulcted for the maintenance of good roads.

While not, by any means, disposed to lay the entire blame upon the supervisor so long as he receives so little encouragement from the too-often unwilling taxpayer, who is so ready to grumble when called upon to assist in repairing the roads, I am convinced that their bad condition is due less to a lack of funds, than the lack of wise, efficient, and combined action on the part of supervisors, and that if each of these officers did his whole duty there would be much less cause for complaint.

There are, however, three or four reasons why the supervisor as such, is likely to be a failure, and the office the most difficult of all township offices to fill.

In the first place, he, like other men, is fond of popularity, and to enforce the road laws during certain seasons of the year, requires no little amount of moral courage, and is often done at the risk of offending a friend or neighbor who regards his obligations to mend roads as a necessary evil rather than a benefit to himself and the public, as well as endangering his chance for a vote in the future.

Besides, he is usually engaged in some other pursuit, as a farmer or mechanic, and thus, very naturally devoting his first attention to his private affairs, comes to consider his public duties as matters of secondary importance.

Again, the remuneration received by him is so small as to offer but a slight inducement to him to be faithful in the discharge of his duties.

Lastly, even if he is sincerely desirous to fulfill his obligations, he often-times displays a lamentable degree of ignorance as to the plainest principles of road-building; plowing a furrow on each side of the road a little, if any, lower than the road bed itself, and throwing the loose stones and unbroken sod into the middle of the road to be broken up by the casual passer-by, at the imminent risk of snapping a spring or laming a horse, cannot be called by any sort of euphemism either road-mending or road-making.

I know all this is wrong. Men ought to be morally courageous, unselfish, faithful, and intelligent; but human nature, and not in the least the supervisor's nature, being what it is, it seems to me that the only way to obviate these difficulties is to abolish the present system of so-called road-making altogether, whether, as in my own township, we sell out the roads in half-mile sections, for a period of three years, to the lowest and best bidder, or, as under the old plan, make the supervisor solely responsible, obliging him, however, to give the taxpayers opportunity to work out their taxes,

a plan, "the main object of which," it has been wittily said, "seems to be to occupy as much time as possible in doing the least possible work."

Instead of it, I offer the following suggestions:

While retaining the office of supervisor, as required by law, reduce their number to two, and restrict their duties to laying and collecting the road-tax; to the appointment of a township road agent; to the payment of his salary and the wages of his employés; and to a general oversight of the roads they being required, at least once in every month, personally to inspect the roads of their township.

Secondly. Create the office of road agent or commissioner, to be filled by the supervisor's appointment, to whom alone he shall be responsible, and by no means made elective, who, for a fixed salary, shall repair and keep the roads in proper order; empowering him, for that purpose, to hire a certain number of men, horses, and carts, annually.

Thirdly. Oblige each township to purchase a road-scraper and iron roller, to be kept in repair at public expense; and although it may be premature in the present state of our finances to demand that the townships shall possess a portable stone-crusher, yet the time is not far distant, I trust, when they will be generally introduced, and a gradual but permanent system of macadamized roads be established.

To render my ideas more intelligible, I place in tabulated form what is embodied in the foregoing suggestions, taking as a standard for the number necessary to be employed, the township of which I am a resident—West Whiteland, Chester county—covering an area about four miles square, and containing more than forty miles of roads, with an average road-tax for the last four years of sixteen hundred dollars:

Salary of road agent,	\$600 00
Wages of four men for 180 days, at \$1 25 per diem,	900 00
Hire of four horses necessary for road machine, for 50 days, at \$1 25 per horse,	250 00
Hire of two horses and carts, for 130 days, at \$1 25 per horse and cart,	325 00
Wages of two supervisors for 12 days' inspection, at \$2 per diem,	48 00
Supervisors' 5 per cent. commission for collecting road-tax,	80 00
	<hr/>
	\$2,203 00

To which amount, for the first year of the proposed change, must be added:

Cost of road-scraper,	\$150 00
Cost of iron roller,	75 00
	<hr/>
	\$225 00

If objections should be made to this, or any similar plan, on the ground of the increase in taxes necessary to carry it out, admitting that no improvement of any kind can be effected without the expenditure of money, I am informed, by competent authorities, that, after the roads are once put in order, they can be maintained at a reduction of two thirds their present cost; while the increase in the value of land, the decrease in the wear and tear of both horses and wagons, and the additional facilities afforded for transportation, would, in a few years, more than offset such additional expenses.

There still remains, however, another source of revenue, which, to my surprise, I have never seen referred to in any article bearing upon this subject.

There is a class of men in every community who make a business of hauling, to whom the very existence of the roads is an indispensable condition of success. Such persons, under our present system, should cer-

tainly pay a much larger proportion of tax than the ordinary citizen, who uses the roads merely as a means of transit.

For example, in a certain township there are two individuals engaged in the transportation of sand; another, of lime and gravel; a fourth, of lime and coal; a fifth, of timber; and two others, of coal, lumber, ice, grain, and freight.

I do not hesitate to say that the seven or eight teams engaged almost daily in this work do more, especially in the spring and after a heavy rain, to cut up and damage the roads in one day than four or five times as many carriages or wagons, such as every farmer possesses, would do in a week.

Ought not, therefore, as a matter of simple justice, the owners of such teams to be taxed much more proportionally than one like myself, whose heaviest vehicle is a one-horse cart?

If a basis be wanted upon which to adjust such additional tax, the capacity or tonnage of the vehicle and the number of horses or mules required to draw it would, perhaps, offer the fairest.

The suggestions I have offered, it will be observed, are not radical in their nature, and possess the merit, I think, of being practical in their application and easily carried out with some modifications in our present road laws.

My experience in this matter with the last Legislature convinces me of the impossibility of effecting any serious alteration at this time.

However, to make our roads what they should be, I am convinced that a much more radical change is needed. The necessity of which, as our ultimate aim, we must strive to impress upon the taxpayers of the State. This change, I believe, can be effected only by placing all main thoroughfares under the supervision of State and county officers to be turnpiked, while the shorter roads, or those beginning and ending in a single township, or extending through two or three contiguous ones, with a maximum limit as to length, might be maintained dirt roads as heretofore.

To meet the increased expenditure such a system would necessarily entail, and the assertion "it should be pretty well proved by this time that townships are unable of themselves to maintain good highways," be admitted as true, application could be made to the Legislature for an annual appropriation to be distributed like the school fund, on condition that such township collects a road-tax at least equal in amount to the sum it would receive from the State.

This plan has, at least, the merit of reducing the tax upon real estate, which falls so heavily upon the farmer, by making personal property liable for its share of the burden.

I am well aware that the subject presents many problems to solve, not the least being the passage of a law that shall satisfy the needs of the more densely populated counties, and at the same time not increase the burdens of those more sparsely settled.

The most satisfactory solution of the difficulty I have met with is to be found in the provisions of the new road bill introduced at the last session of the Legislature by Senator J. P. S. Gobin, of Lebanon, which, with its local option feature, deserves careful study, and ought to modify the objections as to expense urged by many of the poorer counties.

Let us then, after an intelligent discussion of the matter, do what we can to impress upon the minds of our legislators the importance and necessity of effecting a change in our present antiquated system of road laws, so that at the next session of the Legislature the agitation of many years may result in wise and fruitful action, and the present disgraceful condition of the roads be exchanged for one of safety, durability, comfort, and beauty.

COUNTRY ROADS.

WHAT THEY ARE, AND WHY. WHAT THEY MIGHT BE, AND HOW.

By Hon. JOHN A. WOODWARD, of Centre county, Pa.

[Read at the summer meeting of the Board.]

It is not at all improbable that there are those present who are disposed to criticise my selection of a subject for an address to a meeting of farmers. When I recall your attention to the fact that, whether willing or unwilling, farmers bear almost the entire burden of the construction and maintenance of country roads; and that to them, more than to all others—because they use them more—come the comfort and advantages of good, or the annoyances, discomforts, and great expense of bad roads, I feel that the criticism has been fairly met.

It seems to me that in no one thing do farming communities neglect their public duties at so great cost to their private interests as in the matter of roads and road-making. The districts in which the importance of good roads is fully appreciated are few and far between; and those in which intelligent, concerted, and sustained efforts to secure the advantages of first-class highways are made are fewer still. Everywhere churches and school-houses are appreciated and demanded, built and paid for; and this is as it should be. I do not put the case any too strongly when I say that these christianizing and enlightening agencies are largely shorn of their power and curtailed in their influence by the failure to make them easily accessible by the construction of good roads. "Fair-weather Christians" are everywhere held in contempt. I not mean to encourage them in their derelictions when I suggest that they may find their excuse in fair-weather highways.

In the division of the title which I have given my theme, there lurks an indication that I will attempt to tell what the average country road is like, but I greatly fear that in this I have undertaken a task far beyond my powers of description. If I fail very far short of what the experience of those of my audience who had much occasion to drive over Pennsylvania country roads during the past spring would lead them to expect, I can only crave their indulgence; and, while I greatly regret the weakness of the flesh, I stoutly assert the cheerful willingness of the spirit.

The average "township road," and let it be understood that it is this of which I speak, is indeed "fearfully and wonderfully made," often consisting of little more than the right of way fenced in—or fenced out—taking its ordinary course over hills which it might more easily have gone around, and through swamps, undrained and unfilled, which might have been avoided. Crooked and narrow, indented with ruts on one hand, and besprinkled with loose stone or studded by fast rocks upon the other, it was fitly characterized in the reply made by the boy to the traveler who asked of him which of two roads leading toward the place of his destination he had better take. "The distance is the same," said the boy, "and no matter which one you take, before you have gone a mile you will wish you had taken the other."

This is the status of the highways in so great a majority of the districts of the State that it may be accepted as the rule. The hope that an era of better things is at hand, and that the day when all our highways shall be ways of pleasantness and paths of comfort is not far distant, finds strong encouragement in the exceptions to the rule occasionally found in communities which have awakened to the importance of the subject, and bravely undertaken the task of making their roads what they should be. It is a gratulation that such communities are increasing in numbers, and that the rapidly widening circles of their influence are constantly reaching more and more distant points.

To find a good and sufficient reason for the existing condition of our country roads may be a difficult matter; but let us look for it. Is it that we do not know how to make good roads? To this the excellent turnpikes that are to be met with here and there, the capital condition of the streets in our towns and cities, larger villages, and even some country districts, the permanent iron bridges which span our streams at many places, and the magnificent railways stretching themselves in all directions through the State, answer no. There are so many evidences that there are men among us who do know how, and that their services are available. Is it that, as a people, we are unwilling to go to the needed expense? To this the hundreds of thousand dollars of taxes levied and cheerfully paid every year for road purposes give an equally emphatic negative. If, then, we have men who know what good roads are, and how to construct them, and the people are willing to and do furnish the money for their construction and maintenance, why do we not have them? It seems to me that one reason is to be found in our favor to properly appreciate their value and importance to us. A sort of apathy upon the subject, born of the small need of transportation facilities and the narrow circumstances which surrounded the earliest settlers of our wilderness, seems to have fastened itself upon us; and we flounder along through the mud, and pound along over the stones as indifferent to the wear and tear of vehicles, harness, and horse-flesh as we are careless of the loss of valuable time, and drag our weary way over steep hills and plunge down into deep valleys only to climb out again, unmindful of the enormous cost of those lifts, repeated day after day and year after year, for every load of produce marketed, or goods of any kind transported. We are frequently reminded that the strength of a chain is equal only to that of its weakest link, but we forget that the limit of the load a team can take over any given length of road is that which it can drag up the steepest, muddiest, slipperiest hill in it. It seems to me that what we need is to wake up and set ourselves to thinking upon the subject. Will you bear with me while I briefly endeavor to give some data, gathered from authentic sources, which may serve to call a closer attention to it?

The difference in the effective power of horses, when exerted to draw a load over a road as it should be, and one as we ordinarily find it, does not seem to be generally known, or, if known, is not appreciated in its effect upon our daily expenses. Any one of us having a crop of wheat to move to market, and having no means of transportation other than the primitive one of our horses' backs, would feel terribly aggrieved at the expense of marketing. Five bushels on the back of each horse, or ten on the two backs of our double team, weighing six hundred pounds, while not all that they could carry, would, if the distance be, say, ten miles, be a pretty fair load, and, disgusted at our slow progress, we would make haste to procure a wagon, and loading on thirty bushels, or eighteen hundred pounds, make quite as many trips in a day, and congratulate ourselves upon accomplish-

ing our task in one third of the time, and with no greater expenditure of labor or force. This would be about the best that we could do over the ordinary dirt road to be found in the country, and, in order to effect this saving, we must be at the expense of harness and wagon. Now that we have these equipments, can we not do still better? Let us see.

Scientific experiment has shown that a horse can draw upon a wagon over an ordinary dirt road three times the load he can carry upon his back, and that over a macadamized road he can draw upon the same wagon and with the same expenditure of power three times what he can over the dirt road. Suppose we macadamize our road—a thing by no means impracticable, as I shall try to show further on—and upon the same wagon we may load ninety bushels, and carry it to its destination with the same cost of time and power with which we accomplished but thirty miles the day before on the dirt road.

To multiply such illustrations would be a reflection upon the intelligence of those whom I am addressing, and I shall content myself with a bare allusion to the cost of wear and tear of wagons, harness, and horse-flesh incurred by the farming community in conducting all its transportation over the outrageous apologies for roads to be found in many—I am safe in saying most—places in every part of our State. To compute it would be impossible, but it seems to me that it must press with a realizing sense of its weight upon the pocket of every thoughtful man.

Dismissing this portion of the subject, not because it is by any means exhausted, but because I know that there is a limit to your patience, let us inquire what a good country road is, and how it may be obtained.

The primitive "path" which led from house to house of the early settlers on the one hand, and the modern well-built railway upon the other, represent the two extremes of bad and good roads, and the load which may be transported over one or the other by the same horse or number of horses is as one to fifty-four. The former represents the minimum of constructive cost and the minimum of usefulness. In fact, it never cost anything, it never was constructed, and it was worthless when done. A scientist might say that it was evolved from the necessities of the times and circumstances; Mrs. Harriet Beecher Stowe would say that it "just grewed." Like Topsy, it served the little purpose of its little existence, and for our present purpose, like Topsy, has passed away. The other, representing the highest type of civilization, the most practical thought of the day, the very outposts of the advance of mechanical skill and science, and the acme of usefulness, represents also the greatest constructive expense; but it is worth all the outlay, for does it not pay \$50,000 salaries to its presidents, fat interests on its bonds, and rich dividends upon every dollar of stock representing its cost, and sometimes more? For the purposes of a country road, which please bear in mind we are considering, it is as useless as the other, because for physical as well as financial reasons it is practically impossible to build and equip it; but let us stop a moment, and try to learn some useful lessons from its consideration. First, the location is looked after, and in this the one point kept in view is not to reduce the cost, though this is an item, but to secure such low grades and minimum curvature as will enable it to be operated at the least possible expense. The engineer is given a limit of grade and curves, which must in no case, and for no reason, be exceeded, and in making his location looks only to the future interests of the road, and, as many of us in this and adjoining counties well know by personal and recent experience, pays little or no regard to the effect it may have upon the property through or over which it passes. A farmer's barn or house, or both, which may happen to

stand in the route, which he, by means of his scientifically accurate instruments, determines is the one which will be most advantageous to the road, are not considered obstacles. They must be removed or torn down. Property lines are not taken into consideration, and the inconvenient shapes into which our fields may be cut weigh not a feather in the scale. He proceeds under the just rule that private interests may not stand obstinately in the way of public good, but that what of individual sacrifice the general welfare of the community demands must be made and paid for. It is true that this sometimes bears heavily upon property-holders, and equally true that it often involves the railroad corporations in large expense, for the same just rule that subordinates private interests to public advancement and improvement provides that just compensation for damages sustained shall be made.

The proper location of the road once determined upon, let us look for a brief moment at its building. Skilled engineers plan every foot of it in advance, and no detail in its construction is too small to demand their most careful attention. Is a hollow to be crossed? It is filled up to the predetermined grade without an inch of variation. Does a hill stand in the way, or a mountain dispute the passage? It is cut down or tunneled through without regard to expense. Is a mountain brook or ditch from a farmer's meadow encountered? Well-built stone culverts are made to span them, and the water carefully led off that it may not disturb the permanent way. Does the mighty Niagara roll out its sullen defiance? The skill of the Roeblings and Schneiders is called into requisition, money without count almost is placed in their hands, and suspension and cantilever bridges show that even it may not successfully oppose its wrath to the demands for needed public highways.

All this may seem irrelevant, but the obvious moral that it points for us is that in the making of our country roads we should not be too cautious in the expenditure for construction, lest we subject ourselves to large annual outlays for repairs and continual cost in loss of force and time in conducting our daily transportation over them. These people build and equip railways for the purpose of making a profit out of the business of transporting over them passengers and merchandise, and the magnitude of the business is such that it commands the services of the keenest business minds and the highest degree of mechanical skill and talent that the world can produce, and these have long since learned that in order to reduce their transportation expenses to such a point as shall leave them the widest margin of profit they must spare no pains and no cost to make their road as nearly level, straight, and solid as possible. When will we farmers of Pennsylvania and the supervisors whom we annually elect to look after our interests in this direction learn the same lesson?

To go back a paragraph or two, this magnificent triumph of combined capital, business talent, and mechanical skill, with its enormous cost both for construction and operation, its easy grades and gentle curves, its beautiful parallel lines of steel weaving a web of rattling, rumbling industry all over the land, its probabilities of fortune, and its certainty of proving an oppressor to the people unless the unlimited rapacity of its owners be checked by appropriate legislation or business competition, is not adapted to the purposes of the road under consideration any more than is the Indian trail, or the primitive path marked by blazes upon the trees and trodden smooth by bare feet, which led from cabin to cabin of our early settlers. But is there not, somewhere between these two extremes, a happy mean which may be reached without undue expense, and which will furnish a roadway on which the farmer and his children may travel to market, to

church, to mill, to school, and even to the railway station itself, with some degree of comfort and self-respect, and without that constant and severe wear and tear of equipment, and lavish expenditure of time and power that prove so serious a tax? It seems to me that there is; but to meet these requirements it must be just what the railway is: as nearly level, straight, and solid as the circumstances will admit, and the traffic which is to be conducted upon it demands.

If asked how this may be attained, I might answer that, as in many another thing, it is easier not to do it than to do it; so in this, it may be a much lighter task to tell how it will not be done than to lay plans or give instructions for its accomplishment. I hold that it has been clearly demonstrated that this much-to-be-desired end cannot, or at least will not, be revealed by the methods which usually obtain. It cannot be done by the election of men as supervisors whose only qualification for the place is that they have been willing servitors in the disreputable work of the political party which happens to dominate their districts, and who know no more of good roads or road-making than an apprentice to a hod-carrier does of architecture, or the boy who drives a butcher's wagon of surgery; and probably not one half so much as they do—or think they do—of the "straight and narrow way" that leads to the great unknown "Beyond;" and then repeating the same farce each year, with the only variance that the new incumbents know less of their duties and privileges than did their illustrious predecessors. It cannot be done by subordinating public interest to private convenience, and allowing the location of the roads to be substantially dictated by adjoining property-owners, and forced over hills or through swamps or around long angles because, to place it on the proper ground and by the shortest route, would interfere with this man's pig-pen, or cause that one to maintain a few rods more fence than his neighbor. It cannot be done by permitting adjacent land-owners, when rebuilding their fences from time to time, to encroach foot by foot upon the public highway, until it is reduced from its legal width of thirty-three feet to twenty-five or even less. It cannot be done by throwing the sods and loam from the sides of the road up into a narrow ridge in the middle, there to be ground into impalpable dust by constant travel, and washed by spring thaws and summer rains into the ditches, only to be thrown up again and reground, and this operation repeated indefinitely. It cannot be done by levying upon a district a \$3,000 tax, and then accepting in lieu of it \$1,000 worth of alleged "work," performed by the lame and the halt, the decrepit and the lazy, the old men who have passed their days of usefulness, and the boys who have not yet arrived at theirs, the majority of whom seem to be influenced by an overmastering ambition to "work out tax" with the least possible exertion or discomfort to themselves, and the minimum of advantages to the township. I wish, gentlemen, I could present to you, as it presents itself to me, the ridiculousness, the folly, the extravagance of this system of "working out the tax," as it is too often carried out. He was not far wrong who suggested that it be rechristened and called "*wiping out the road-tax.*"

Last winter Mr. A. G. Richmond, a resident of Meadville, Pa., who has adopted the profession of law as a means of making a living and a fortune, and who paints for recreation and amusement, put his idea of the matter—as obtained from observation during his drives about the country while road-making was in progress—upon canvas. It tells the story quite as strongly as I could if I were to put it in words, and I take great pleasure in being able, through Mr. Richmond's kindness, to submit it to you.

Let us look for a moment at what this slovenly, careless, hand-to-mouth, slipshod system, or want of system, has already cost us:

It would be very interesting, and I think very instructive, to be able to give, in this connection, the exact amount of money which has been expended for roads in our State for any one year, or for a term of ten years, but there is no available record of this excepting in the books of the supervisors or clerk of each township; and to gather this together and put it in form would require an expenditure of labor and money which I have not felt justified in undertaking. I must ask you, therefore, to be content with such illustration and basis for estimate as may be afforded by the statistics of my own county, which I have been at some pains to procure. During the ten years ending with 1872, the taxes levied and collected in the several townships of the county for road purposes alone run up to a grand total of \$290,000. Bear in mind, please, that this large sum has been expended upon the *country* roads, and does not include the amounts which have been expended upon the turnpikes by their owners, upon the streets of the six boroughs of the county by those corporations, nor upon the many iron bridges which have been erected at the cost of the county treasury. Add to this the \$24,000 paid by the county commissioners for bridges, and the \$63,000 or more used by the boroughs of the county, and we have a grand total of \$377,000, to say nothing of the numerous turnpikes and many miles of railways which are built and maintained by private enterprise. Thirty-seven thousand seven hundred dollars per year to construct and maintain the wagon roads of Centre county, leaving out turnpike tolls, which I have no means of estimating!

Supposing this rate to have been maintained during the eighty-four years of the county's existence, and we have \$3,166,800. This, however, would probably largely exceed the actual amount, as in the early days, when the county was more sparsely settled, much less sums were annually expended. Cut off \$1,000,000, and the odd hundred thousand, it being more than one third, to make the estimate a fair one, and we have \$2,000,000, a sum which represents \$1,000 per mile spent upon two thousand miles of road. I believe that one thousand miles is largely in excess of the actual amount of public road we have, but accepting this as an estimate, this vast sum represents a cost of \$2,000 for every mile of it, and I do not think this will be considered an over-estimate for the entire State.

Having thus shown that the cost of good roads can be, and is, provided for, let us abandon the past, and look a little into the future—leave the roads upon which we have been traveling, and examine those upon which our further progress is to be made, endeavoring to show how they can be made what they should be.

First, we need a little good engineering, and next, some common-sense work with good machinery. By the good engineering, we shall be piloted around the bad places, and our work made easier, and by the common-sense work we shall, in the end, have turnpikes, or better, of all our roads.

The difference in length between any two points is often very small. A road between two points ten miles apart, curved so that no more than a quarter of a mile of its length can be seen at any one point, is only one hundred and fifty yards longer than a direct line between these points. As a rule, it may be laid down that it is cheaper to avoid a hill and pass around it, even by adding to the length of the road twenty times the height of the elevation to be avoided. To avoid a hill fifty feet high, it would be better to increase the length of the road one thousand feet. True, the first cost

would be greater, but have we not already learned that first cost is by no means the first consideration? A horse that can draw one thousand pounds on a level road, or up a slope of one in one hundred and fifty, can only draw four hundred pounds up a slope of one in twenty. Experience has shown that the greatest grade of a road should not exceed one in forty, and the least be not less than one in one hundred and twenty-five, as within these limits perfect drainage and the greatest economy of transportation may both be secured. Thus the grades of a road are seen to be a serious item of consideration, not only as to its just cost and maintenance, but as to its usefulness as well. Another point at which good engineering will tell is in the shape of the surface of the road in its cross-section, or from side to side.

This, on level ground, should be in the shape of two planes, sloping from the center at the rate of one in twenty-four. Less than this would fail to carry the water off from the surface promptly, and more would take it off so rapidly as to cut and wash. And here let me say that the narrower a road-bed can be between the side ditches to properly accommodate the traffic passing over it the better, because the dryer it will be. A thirty-two-foot road, properly made, will be found much dryer than one forty feet wide, and one twenty-five feet wide will be dryer yet. Twenty-two feet gives ample room for passing wagons, and would, I think, if properly graded both ways, be in fairly good condition at all seasons. The legal width of a road in this State, on level ground, is thirty-three feet. Twenty-two feet of this in the center, properly graded with sub-soil taken from the ditches on each side, would be a good foundation for a first-class road. This would leave five and a half on either side, four of which may be devoted to the ditch, leaving one and a half between the ditch and the fence, which would seem to be necessary for the proper support of the fence. On side and cross roads, where the travel is limited, this, if carefully watched and kept in repair, would fully fill the bill; but upon all main thoroughfares, subject to the wear of constant traffic, this should be macadamized, at least for the central fourteen feet. A horse that can draw one thousand pounds upon a good earth road, when dry and hard, can draw three thousand upon a good stone road, so that a macadamized road, even if costing three times as much as the earth road, would be cheaper in the end, because requiring a much smaller annual outlay for repairs. Add to this the necessarily bad condition of even the best earth road during a large portion of the year, and the advantage of the macadamized road is still more apparent.

The late George Geddes, whose reputation as a successful farmer, and an excellent engineer as well, is too widely known to need more than mere mention to this audience, gave this problem of road-making much careful study, and was frequently called upon to reduce his ideas to practice in the construction of country roads and turnpikes. In the page or two last read I have quoted him with considerable freedom, and I quote him literally when I say that "a road of twenty-five miles in length, of such a character as to allow of one horse drawing on it twice as much as on another road, could, if there were one hundred tons of freight passing over it daily, be profitably constructed at an extra expense over that of the poorer road of \$9,500 per mile. The economy of cost in carriage would pay interest at ten per cent. on that sum, to say nothing of the annual saving in repairs." Lest any should take these figures to be Mr. Geddes' estimate of the cost of a properly constructed road and be frightened at it, I make haste to say that he once constructed a turnpike thirty-six miles in length at a cost of \$1,120 per mile, which was part of the

great highway from Buffalo to Albany, and which endured more than thirty years of that heavy traffic without having been cut through; and I have the assurance of gentlemen largely connected with the construction and management of turnpikes that their average cost is not far from \$1,200 per mile, being more or less, according as its location required more or less expensive grading. With the improved machinery of the day, specially adapted to road-making, these figures can be greatly reduced, and I do not think I am visionary when I say that, with a proper expenditure of the public funds, and with little or no increase of the rate of taxation, we can, in the few years left to us of 1800, make every main thoroughfare in the State a better turnpike than the average we now have, with every side or cross road, no matter how unimportant, thoroughly graded, drained, and surfaced, equal to the best earth roads we now have; with every important bridge an iron one of the most substantial kind; and ready to begin the next century with a reduction of one half upon our taxes for road purposes.

It is true that the existing road laws of our State offer extraordinary facilities for maintaining the apologies for roads which, in too many cases, obstruct rather than promote travel, but they do not compel us to maintain them. Doubtless our statutes upon this subject might be so modified as to produce wondrous changes for the better in the management of our highways, very much to the advantage of the whole people; and possibly, at some period of time in the far distant future, when our legislators shall have succeeded by dint of double sessions (for which they vote themselves double pay, Sundays, recesses and all, vetoes to the contrary notwithstanding,) in disposing of the political questions which vex their ponderous minds and weigh upon their anxious hearts, some attention to such practical matters as this may be secured. This, however, may be too much to hope for, or prove to be a "hope deferred," and I am endeavoring to point out how the end in view may, haply, be attained not only without increasing the burden of taxation, but with the laws as we now find them, which graciously permit us, if they do not aid us, to have just as good roads as we are willing to make. Under them, the purchase of road-making machinery, including all of the minor tools, and such major ones as a patent scraper, heavy roller, stone-breaker, and engine to run it, is a perfectly legitimate charge upon the road district, which is the township; and with them in hand, and under the charge of competent men, my dream, if you see proper so to call it, would not be far from realization. And this can be done without oppressive taxation.

Let me again turn to my own county for illustration: If, as the record shows, we have within ten years paid \$377,000 for road purposes, is it not fairly within the range of probability, taking into consideration our rapidly increasing population and wealth, that in the seventeen years lying between us and 1900 we shall pay for the same purposes little, if any, less than \$700,000? Does any one doubt that this vast sum, judiciously expended, would make my dream a reality?

For the purpose of giving definite shape to my idea of judicious expenditure of the road funds, let us take up a single road district; and, with your permission, I will thus use the township in which I have my home, and with which I am naturally most familiar, bearing in mind that I am using it simply as an illustration of what may be done in any and every township in the State. In it we have a fraction over twenty-seven miles of public road, the maintenance of which is a public charge. Of this, ten miles are main thoroughfare, and should be macadamized. Ten more are cross or side-roads of importance, and should be of the best character of

earth roads. The remaining seven are in outlying districts and but little used. During the ten years past, we have expended upon our roads in round figures an average of \$1,500 per annum. At the same rate of taxation, and supposing the wealth and population of the township to remain stationary, we shall, in the coming seventeen years, pay an aggregate of \$25,500. It is not extravagant to expect during that time an increase of ten per cent. in population and taxable wealth. Add this, and we have a fund of \$28,000 to draw upon, (and that, mind you, without any increase in the rate of taxation,) or \$1,900 per mile for every foot of road we own, and a few hundred dollars to spare. Beginning our estimate of repairs under the reform system which I am advocating, with the seven miles of least important road, one dollar per mile, judiciously expended upon them this season, with the aid of the improved scrapers and other tools now to be had, would put them in better condition than ever before, and make them so permanently good that but little repairing would hereafter be called for for many years. But let us be fair to them, and appropriate to their repairs ten dollars per mile per annum for the remaining fifteen years, thus giving them a total of \$250 per mile for the term, consuming \$1,750 of our fund. Now take up the ten miles of more important side and cross-roads, and expend upon them \$200 per mile in the first year, which is ample to make them as good as dirt roads can be made. Appropriate for their repairs twenty dollars per mile per annum for fifteen years, which gives them \$500 per mile for the entire term, or a total of \$5,000 for the ten miles. Add this to the other, and we have consumed \$6,750 of our fund, leaving us \$21,250, or \$2,000 per mile for the remaining ten miles, which should be macadamized, and \$1,250 over for incidentals. One thousand of this, with the aid of the machinery to which I have alluded, will be ample to give each mile a solid coating of finely broken stone, well packed and rolled together, and leave \$1,000 per mile to be spent during the next fifteen years, by the careful expenditure of which such repairs and additions can be made as will leave these ten miles a perfect road, and we shall be able thereafter to reduce our taxation for road purposes to a trifle of what it now is.

If the objection be raised that this plan requires an amount of ready money for the purchase of tools, etc., that cannot be had without excessive taxation for a year or two, I reply that it is quite within the province of the supervisors, under the existing laws, to create an indebtedness for this purpose. Let bonds for the \$3,000 or \$4,000 needed be issued. Make them payable at any time after 1890, but not due until 1900. They can be placed at very low rates of interest. Then take the good work in hand at the heavy end. Begin on the most important and most frequently traveled piece of road, and so far as you go in any one year, make it perfect, expending all your taxes for that year upon it, excepting so much as is needed to make temporary repairs upon other parts. The next year this piece will need no repairs, and another stretch can be put in perfect order. In a few years the work will have been completed, the greater portion of the taxes can be devoted to the payment of the bonds, and when the year 1900 reaches us, my dream will have come true; all our main thoroughfares will be macadamized, all our side and cross-roads as good as it is possible to make of earth, and the possibility of reducing our road-tax by at least one half will be within reach.

Grant me but a moment or two more in which to urge this matter upon the attention of farmers throughout the State. If I were advocating measures which involved an increase in the burden of taxation which rests so heavily upon us all, no matter how profitable it might prove in the end, I

might be met with the just criticism that just now, in a year of low prices, when the wheels of industry are clogged, and revolve but slowly, heavily, and uncertainly; when a stagnation closely approaching "hard times" has taken possession of the business of the country, is an inopportune moment in which to broach it. But this is not the case; what I suggest involves no increase of expenses. I advise only that we shall take counsel of our brains, and apply to our public duties and interests the same thought, energy, and business sagacity that govern us in our private transactions. What better time to inaugurate such a course? "When the prices of produce are dwindling, and the farmer's profits are decreasing, it becomes a serious matter for him to consider how much of the cost of his produce grows out of the wretched character of the road he is daily compelled to traverse during a considerable portion of the year."

The practical road to the very practical end at which we are aiming seems to me to be by the way of practical politics; not in the sense in which the term is ordinarily used, but in that better sense which shall bring practical results to the practical people of the community, if not to the practical politicians. Without question, the audience which I have the honor of addressing is largely composed of men of influence in the politics of the communities in which they live. Why should not this influence, this power, be brought to bear upon the subject now in hand? Just now the fires of national politics are being lighted. Within a few weeks the caldron will be seething in a terror of fury, and we shall all go as wild over the stew as though we really believed that the salvation of the country for all time depended upon the success of our favorite candidate. Possibly that is true, and for both sides; but in my opinion, gentlemen, the question of who shall hold the reins of National Government for the coming four years matters less to us than does the one of who shall be our next year's supervisors.

The rise of one political party or the fall of another is of infinitely less moment to us than is the condition of our public highways. In this matter of the Presidential election, let us live up to our privileges, and perform our duty, as we shall see it, in a manly and self-respectful way, but let us reserve our political influence, and force, and activity for next spring's elections, and then see to it that we elect competent supervisors.

That will be our vantage time. Let us take this question up and think over it. Then go to our thoughtful, level-headed neighbor and talk over it. Then take him with us to the next, and so start the ball rolling. Select for supervisors the two best and most reliable business men in the township, regardless of what political party they train with, what church they belong to, or what are their opinions upon free trade, protection, or tariff reform. Make "Highway reform and reduction of road-taxes" your battle cry, commit them to the movement, and elect them upon it. Then the work is well begun. Push it on with all zeal and energy. Each step in the way of improvement will make the next one easier, until after a short time the movement will roll on of its own momentum, and when the perfect end has been reached, we shall all rejoice that my dream has not been "only a dream."

THE LAW AND CUSTOM OF PUBLIC HIGHWAYS.

By Hon. GEORGE W. HOOD, of *Indiana County*.

Webster tells us that "a highway is a public road" or "a way open to all passengers." Every thoroughfare, therefore, common to the public is a highway, whether it be a wagon road, a horse, or foot way, or a navigable stream. In other words, a highway is a dedication to the public of the occupation of the surface of the land for the purpose of passing and repassing, the public generally assuming the obligation of repairing it. In the brief treatise of the subject assigned me, I shall confine myself more particularly, as it was doubtless intended I should, to the law and custom of roadways in the ordinary and common acceptance of the term, not entering at length, if at all, upon the law of navigable streams or of the various kinds of thoroughfares embraced under the general term of highways.

The public may acquire the right of way over the lands of the private individual by direct grant, by prescription, by dedication, or by the power to take private property for public use, commonly known as eminent domain. The owner of the soil can, as a matter of course, convey by deed, or he can release to the public, which is much more common in Pennsylvania, the right of way over his lands. Or it may be presumed from such continual using of the way as establishes the presumption of a grant having been made, and which is known as prescription.

The theory of the right of way by prescription originally was that the right claimed must have been exercised beyond a period of time, back of which the memory of man runneth not to the contrary. In England our law commentaries give this time to extend as far back as to the time of Richard the First; but time has materially reduced the period and modified the rule to that required by the statute of limitations for the commencement of actions for the recovery of real property, say twenty-one years. The using of the road during this period, however, must be continuous and of such a character as to repel the presumption that the way has been used by the public as a temporary convenience, by the license of the owner of the soil, with a right by him reserved to revoke the permission to use it by the public whenever he pleased.

To dedicate private property to public use is simply to set it apart to such use with the intention accompanying the act clearly manifesting and expressing this purpose; no particular form or solemnity is necessary to constitute a valid dedication. It need not even be in writing, but if by parol it may be established by proof of the verbal declarations of the owner of the land.

Sometimes it has been presumed by the silence and acquiescence of the owner and the occupation of the property by the public; but it has been held generally that such use must be adverse to the owner of the title to raise the presumption of dedication. 65 Illinois, 428.

Under the right of "*eminent domain*," the power to take private property for public use is well settled to exist only in cases where the public exigency demands its exercise. In the cases of *Loughbridge vs. Harris*, 42

Ga., 500, and Hamilton Bridge Company vs. Shaubacker, 49 Mo., 555, and in various other cases throughout the United States, the principle has been clearly and distinctly held that to authorize the taking of private property under the right of eminent domain two things are necessary: First, property must be taken for the public use; second, provisions must be made, except in urgent and extraordinary cases, for just compensation to the owner of property taken.

Now, to meet the first requirement of the condition, it is not necessary that the entire community, or, indeed, any considerable portion of it, should enjoy the benefits for which the property has been appropriated; but if the taking of private property tends to enlarge the resources of the country, encourages new and useful industries, aids the productive power of a considerable number of the citizens of the State, encourages the building of towns, and opens up new channels for the employment of labor and capital, or in any way contributes, either directly or indirectly, to the general welfare of the whole community, and enhances the value of property generally, then the essential element in the right of eminent domain has been complied with. *Peckering vs. Rutty*, 1 S. and R., 511. The Legislature has no power to take private property without compensation.

As to the compensation made to the owner of private property thus taken under this right, it *must* be *real* and *substantial*. It *must* be a sufficient consideration for the property taken, and adequate to and commensurate with the privileges conferred on the public. It need not be in bonds or obligations of any sort, or even in money, the currency of the country; but the appropriation of the owner's land to the public use may be the means of bringing such advantages to him as to entirely or even more than fully compensate him for the land taken. If new industries, as the result of the land taken by the public, are brought to the community in which he lives and his property is enhanced in value, he has, to the extent of the enhancement of the value of his property, already received a just compensation for the soil appropriated under the right of eminent domain.

But where statutes exist prescribing the mode by which a party may be divested of his property for public use without his consent, the statute must be strictly followed, because wise policy and sound constitutional principles require us to regard with great sacredness the rights of the individual deprived of his land, and the construction of the statute is always in favor of the individual as against the public. The public, then, having the right of appropriating private property to public use, a pertinent inquiry arises as to what the rights of the public are in the highways; and our first observation is that the public is entitled to the free use of the road in passing over it in the usual course of travel, with the powers and privileges incident to that right, such as digging the ground, turning large rocks, cutting down trees, making and repairing the road; but the title of the land remains in the original owner, subject to the public easement. The Supreme Court of Pennsylvania, in the case of *A. Kirk Lewis et al. vs. Thomas Jones et al.*, 1 Penna., 336, by a unanimous opinion said: "No principle is more familiar or better settled than that the right of the soil in a highway resides in the proprietor of the land over which it has been laid, and that the citizen has no more than a license to pass along it with carriages and cattle," an abuse of which, like the abuse of any other license given, not by the party, but by the law, makes him a trespasser against the proprietor from the beginning.

The use to which the State has dedicated her highways is, I think, plain and specific, and no thoughtful, intelligent citizen can mistake the intent.

The public acquires but an easement, and the proprietor of the soil over

which the road passes has as much right to protect himself against nuisance on the highways as if committed on his inclosed premises. If a drove of cattle or pigs be stopped in front of your door or root up your soil, the owner is responsible to you at law as much as though they did the same thing inside the fence. *No person* has a *right* to stand in front of your door and whittle your fence, throw stones at your dog, or use abusive or profane language, without being liable for trespassing on your land. *All persons* have a right to pass and repass in an orderly manner on the road, and to use it for the purpose intended by the law, but not to abuse it.

But whilst the owner of the soil over which the road passes can thus protect himself against the public, he, on the other hand, cannot use the soil for any purpose which interferes with the use of the road by the public for travel. He cannot put buildings on it, or his wagons, or his wood, or anything else which interferes with the free use of the road. He may even be indicted for obstructing the highway.

But notwithstanding the devotion of the surface of the soil to the public use, the title of the land remaining in the original owner of the soil, the owner of the fee retains his right to all the mines, springs of water, earth, timber, and quarries which are within the road and not incompatible with the public right of way. He may avail himself of an action of ejectment, trespass, or waste to protect him in the same, and should the road be abandoned, or the public easement be forfeited or lost in any way, the entire and exclusive property and right of enjoyment of the soil *reverts* to the proprietor of the land. Under the revised statutes of New York, allowing owners of lands adjoining highways to plant trees on the sides of the road, and to bring action of trespass for injuring them, *assumes* and *affirms* the common law principle in relation to such rights. In the case of *Fairfield vs. Williams*, 4 Mass., 427; *Perley vs. Chandler*, 6 Mass., 454; *Stackpole vs. Healy*, 16 Mass., 33, and *Overman vs. May*, 35 Iowa, 89, it was clearly and expressly held, and such is well-recognized law to-day, "that where a highway or street in a municipal corporation has been acquired by prescription, the fee remaining in the land-owner, he has a right to all things connected therewith, such as trees upon, or mines and quarries under, the land over which the highway passes, subject only to the right of passage by the public, and the incidental right of repairing and keeping it in proper repair."

The public can only acquire an easement in the soil, timber, or materials found within the highway and *only* in *such* as are requisite for the building and repairing of the road. The public cannot become the owner of the soil, timber, or materials found within the highway, and cannot devote them to any other use than that of making or repairing the road. The public would have no right to transport the materials to other roads, or to interfere with them in any way which would injuriously affect the rights in them by the owner of the soil. In the case of *Cummings vs. Prantz*, 24 Mich., 514, it was held that gravel could not be removed from an alley to fill up or repair a street. In *Overman vs. May*, 35 Iowa, 89, it was held that although the public might quarry stone under a road or highway to repair the same, it could not so quarry stone there to repair another road.

Neither has the public the right of pasturage upon the highway. *No municipality or State* has power to give a right to any individual to use the land appropriated as a highway for any other purpose than that of travel, because all but this right of use remains in the owner of the land and cannot be taken from him without his consent or by the process of law. The pasturage which grows along the wayside of a public road is in no sense a necessity to the public, and there is nothing in the character of a

public highway which makes it common or gives the public a right to it. A strong case to this point is that of *Cole vs. Drew*, 44 Vt., 49. Drew's children in passing over the public road to school were discommoded and inconvenienced by the grass making their clothing wet. He applied to the district road supervisor for permission to cut the grass, which permission was granted him, and he cut the grass and fed it to his horses. Cole, a proprietor adjoining the road, brought suit for the value of the grass cut and removed, and recovered judgment in the court below. The Supreme Court on appeal affirmed the judgment, and held that the owner of the soil over which a highway is located is entitled to the enablements growing thereon and the entire use of the land, except the right which the public have to use the land and materials thereon for the purpose of building and maintaining a highway suitable for the safe passage of travelers.

These observations comprise, in the main, what I believe to be the law with reference to highways as between the public and the individual. I do not know that the custom, *especially* in our State, is different, as nearly all questions relative to the rights of either the public or the individual have long since been decided and settled by our highest court, and the law and custom do not seem to be at variance.

As to the law of the road, a traveler may use the middle or either side of the public road at his pleasure, and is not obliged to turn out for another traveler in the same direction, provided there is convenient room for him to pass on the one side or the other. The road is intended for the accommodation and convenience of all travelers, and he who starts out on a journey in a pleasure carriage has no more rights to the road than the teamster moving along with his heavy load.

It is the general custom of the country, though I do not know that it is the law, that a loaded wagon has the preference on the road, and the light wagon should be required turn out if necessary, if both vehicles were moving in the same direction. The heavy loaded wagon, however, must not become an obstruction on the road or cause delay to the traveling public, or the teamster must not be guilty of willful or wanton delay. His duty is, and the law requires him, to move along as fast as the condition of the road and the burden of his load will permit, and not in any way or by any means prevent another team from passing him, if the person driving it desires to do so. I have often heard it said that a mail-coach is privileged and that the right of way must always be yielded to it; but on an examination of the law, I find that in the case of *Bolton vs. Calder & Wilson*, 1 Walls, 360, a case which has long since been decided, and which has ever since been recognized as the law, that a mail-coach is on a footing with other vehicles in this respect. I know of no distinction as to rights of persons in the use and enjoyment of our highways.

As to meeting on the highway, the general custom of the country is, though the rule is not infallible, that the duty of persons traveling in wagons or other vehicles, meeting each other in the public road, is to pass on the right-hand side of the road. I well recollect that when I was a boy, at home on the farm, and was started by my father to market or to mill, my positive instructions were, on meeting another team, to turn to the right, no matter what kind of a vehicle I met or how heavily it was loaded. I was taught that such was the law, and that a violation of this rule would be followed by heavy and severe penalty. But the Supreme Court, in the case of *Grier vs. Sampson*, 27 Penn., 183, varied the rule, and held that while the general custom of the country for persons meeting on the highway is to pass to the right, but when a horseman or a light carriage meets

a heavily laden team and can pass with safety on the left, it is his duty to give way, and leave the choice of the road to the more unweildly vehicle.

In the case of *Beach vs. Parmeter*, 23 Penn., 196, the learned judge in the court below said, and his opinion was affirmed by the Supreme Court, "that a footman or an equestrian has the right of way as well as the driver of a carriage or a lumber-wagon." The enjoyment of this right is regulated by reason. A footman or horseman cannot compel a teamster who has a heavy draught to leave the smooth beaten track of the road if there is sufficient room to pass on either side, and where a road is narrow, or there is difficulty in passing, and it becomes impracticable or dangerous for the teamster to give part of the way, and the horseman can pass by riding out of the road, it is his duty to do so; if he refuses, and a collision ensues which occasions injury to his horse, it is attributable to his own negligence or obstinacy, and he is without remedy.

The law does not require any person to do an unreasonable thing, and if the same reason and good sense are exercised by travelers on the public highway as to their respective rights in the road as they ordinarily exercise in matters relating to other affairs in life, there will be but little necessity for the adjudication of any other rights before a tribunal of justice.

As to whose duty it is to open and keep roads in repair, there can be no question. The common law has long since fixed that duty upon the road supervisor of the township through which the road passes or is located, and the statute has in no sense or manner changed that law.

The books abound with decisions of the highest court, *clearly* and *expressly* holding that the supervisors of the township through which the road passes are bound to keep the road in a safe and passable condition for the traveling public, and in violation or neglect of this duty severe penalties have been imposed. In Pennsylvania, supervisors are subject to indictment if they fail to open a road when directed by order of the court of quarter sessions of the proper county, or if they fail to keep them in a safe and passable condition for the public.

Townships, cities, and boroughs are all alike as to their duty in this respect, and are bound to make the public highways safe for the public travel, and, if necessary for the safety of travelers, must erect walls or barriers alongside of its roads or streets. In a very recent decision of our Supreme Court, it was held that where public roads running through townships are so dangerous by reason of close proximity to a declivity or precipice that common prudence requires extra precautions in order to secure safety to travelers, the township is bound to use such precaution.

In another recent case, it was held that where a person was driving over an unrailed township bridge, and the horse took fright at a plank nailed over a hole in the bridge, and, despite the efforts of the driver, backed over the bridge into the creek, by which the horse, carriage, and harness were injured, that the township was liable for the damage sustained, because the road should have been kept in a safe condition. I know of no law, either common or statute, which expressly requires barriers to be built along dangerous precipices, or railings to be put up on bridges along the public highway; but municipalities and townships *are* required by law to keep the highway in a safe condition for traveling, no matter what the inconvenience or cost may be, and it is gratifying, indeed, to find that our courts are holding townships and boroughs strictly accountable in cases of neglect of duty in this regard, because human life and protection to property should be tantamount to all other considerations.

Note by the Secretary.—During a recent suit in Philadelphia, (*Brooks vs.*

Thomas,) Judge Biddle, in passing upon the motion for a new trial, used the following language:

"The ruling complained of in this case arises from a misapprehension in what is called the 'law of the road.' There is no rule of law which requires a traveler to drive over any particular part of a public highway, as was supposed; he can drive over the middle or either side, no matter in what direction he may be going.

"What is called the 'law of the road,' is, that persons meeting on a highway must each keep to the right. This rule is modified in the case of a footman or horseman, who cannot compel a teamster who has a heavy load to turn out of the beaten track, or even a light wagon with a heavy draught. If a horseman or light vehicle can pass with safety on the left of a heavily laden team, it is their duty to give way and leave the choice to the more unwieldy vehicle. The law or custom which requires persons meeting in a public road to pass to the right applies to and is intended to regulate the duty and conduct of those traveling on the road as between themselves. The plaintiff and the public had a right of way over any and every part of the road, in the middle, on the right or left hand side of the traveled part thereof. Travelers naturally keep as near as they can to the right side of a highway, not because of any legal obligation to do so, but because they are then in a position to require any one meeting them to turn out. They may travel on the left side if they please, but then, if they are met by a person driving in an opposite direction, they must turn out. The obligation is not to keep to any particular part of the highway, but simply to turn to the right when others meet them. As to the attempt to add to this law by setting up some particular custom, Chief Justice Gibson, in *Boulton vs. Colder & Wilson*, 1 Watts, 360, expresses himself with some force. In that case it was an attempt to establish, by parol proof, a custom that, where parties are traveling in the same direction, it is the duty of the leading carriage to incline to the right, the other making the transit at the same time by the left. Judge Gibson held that the court below was right in rejecting such proof, and that where a leading traveler refused to give another an equal share to permit him to pass, if practicable, he would be answerable, but for the follower to effect a passage by a forcible collision with him is not to be justified, the redress being demandable by due course of law.

"In the present case, the defendant was on the left-hand side of the highway, with room between him and the curb for a carriage coming in the opposite direction to pass him if the driver of it kept to the right. The plaintiff, coming from the opposite direction, had a right of way on the railroad track, but, instead of keeping on that track, he straddled one of the rails. Having thus but one wheel on the track it was his duty to follow the 'law of the road' which regulated the conduct of those not driving on the track. He then, instead of keeping to the right of the carriage approaching him, kept to the left, and his right wheel came in contact with the defendant's right wheel. He was thus violating himself the 'law of the road.' The jury having, under the instructions as to the law of the case, found the defendant guilty of no negligence, gave a verdict in his favor. This verdict we see no reason to disturb. Rule discharged."

MINUTES OF THE SUMMER MEETING,

Held at Towanda, June 17 and 18, 1885.

WEDNESDAY MORNING, *June 17, 1885.*

Board called to order at 10, A. M., by Hon. R. E. PATTISON in the chair.

On behalf of the Bradford County Agricultural Society and the citizens of Towanda, Hon. WILLIAM T. DAVIES welcomed the Board, and was followed by Hon. R. E. PATTISON, in reply, on behalf of the members present.

Present, Hon. R. E. Pattison, and Messrs. Atherton of Centre, Young of Dauphin, Piollet of Bradford, Garretson of Adams, Zerr of Berks, Scott of Bradford, Reeder of Bucks, Herr of Clinton, Eves of Columbia, Oliver of Crawford, Harvey of Delaware, Barnes of Lehigh, Smith of Luzerne, Foresman of Lycoming, Shriner of Northampton, Butterfield of Susquehanna, Frederick of Union, McDowell of Washington, Underwood of Wayne, Dr. H. Leffman, Microscopist of the Board, and Thomas J. Edge, Secretary. At subsequent sessions, Messrs. Patterson of Armstrong, Colvin of Lackawanna, Speaker of Sullivan, and Davis of Warren, were present.

The Chair named Messrs. Foresman of Luzerne, Reeder of Bucks, and McDowell of Washington, a Committee on Credentials.

On motion of Mr. BARNES, seconded by Mr. ENGLE, the reading of the minutes of the annual meeting was dispensed with.

On motion, the Board then proceeded to fix the time and place of the fall meeting, when it was moved by Mr. ENGLE that Lancaster be selected as the place of the next meeting, and that it be held at some time during the annual fall exhibition of the State Agricultural Society in Philadelphia.

On motion of Mr. ATHERTON, the resolution was divided, and a vote taken first upon the place at which the meeting should be held, resulting in the choice of Lancaster.

On motion of Mr. ENGLE, seconded by Mr. SMITH, the time for holding the meeting was left to the Advisory Committee, with the understanding that a time during the continuance of the State fair should be selected.

Mr. FORESMAN of Lycoming, on behalf of the Committee on Credentials, reported that Asher D. Shimer, of Northampton, had presented credentials showing his election as a member of the Board from that county, for a term of three years; they also reported the following delegates present:

Towanda Grange, No. 200—E. W. Hale, J. G. Patton, and B. F. Bowman.

Troy Grange—L. P. Williams and Mrs. L. P. Williams.

Colley Grange, No. 365—C. F. Hunsinger, Earle Allen, and H. P. Hunsinger.

Warren County Agricultural Society—C. W. Stone.

Creamery Mutual Aid Association of Chester and Lancaster Counties—Milton Darling, Hayes A. Clark, and John I. Carter.

Susquehanna Grange, No. 74—Kirby Bunnell and Horace Brewster.

Glenburn Farmers' Club of Lackawanna County—H. W. Northrup and Andrew Miller.

On behalf of the standing Committee on Dairy Products, Mr. REEDER, chairman, presented a full report from that committee, which, after discussion by Messrs. Harvey, Carter, Atherton, and others, was referred back to the committee, with instructions to propose and report some definite line of action for the acceptance of the Board.

After the transaction of miscellaneous business, on motion adjourned to meet as per programme.

WEDNESDAY AFTERNOON, *June 17, 1885.*

Board called to order at 2, p. m., by His Exc'y, R. E. PATTISON, in the chair.

On motion, Mr. J. W. INGHAM, of Sugar Run, read an essay on "Dairy Farming in Northern Pennsylvania," which elicited discussion from Messrs. Carter, Reeder, Colvin, Searle, Piollet, and Secretary.

On motion of Mr. SMITH, of Luzerne, Captain M. W. OLIVER, of Crawford, read an essay in answer to the question, "What is a Farmer?" the subject-matter of which was discussed by Messrs. Piollet, Harvey, Smith, Herr, Hillis, Searle, and others.

In the absence of the essayist, Dr. ATHERTON (at the request of the Secretary) read an essay by Mr. Beebe, of Venango, on "Gypsum and its Use on the Farm," the matter of which was discussed by Messrs. Harvey, Zerr, Engle, Piollet, Young, Hale, Williams, Elsbree, and Secretary.

On motion, the subject of Mr. Underwood, of Wayne, ("Small Farms *versus* Large Ones,") was continued for presentation at the fall meeting.

Adjourned.

WEDNESDAY AFTERNOON, *June 17, 1885.*

Board met in the court-house to hear an address from Dr. Leffmann, Microscopist and Hygienist of the Board, on "Sanitary Delusions and Superstitions," which was well attended by the citizens of Towanda and vicinity.

THURSDAY MORNING, *June 18, 1885.*

Board called to order at 9, a. m., by Hon. R. E. PATTISON in the chair.

On behalf of the Committee on Dairy Products, Mr. REEDER stated that he had conferred with the delegates present from the creamery associations, and that they had decided to suggest to the Board that the standing

Committee on Dairy Products should advise with the committee of the creamery associations, in relation to the enforcement of the law relating to imitation butter.

On behalf of the Executive Committee, the SECRETARY reported that Prof. W. H. Jordon, the Chemist of the Board, had presented his resignation, and that the committee had selected Dr. F. A. Genth, of the University of Pennsylvania, to fill the vacancy. On motion, the report was accepted, and the selection of Dr. Genth confirmed for one year from August 1, 1885.

Mr. UNDERWOOD, of Wayne, offered the following:

WHEREAS, The members of the Pennsylvania Board of Agriculture have learned that Prof. W. H. Jordan has severed his official connection with our Board, and is about to remove to another State; therefore,

Resolved, That we desire to testify to our appreciation of his worth and of his work in our State in the cause of scientific agriculture; that he will have our best wishes for his continued success and prosperity in his new and responsible field of labor, and that while we part from him with regret, we do so in full confidence that the sterling qualities which have rendered him so eminently useful among us will carry him successfully through his future undertakings; and

Resolved, That the Secretary of the Board be instructed to forward to Prof. Jordon a copy of these resolutions.

Resolutions adopted without debate.

On motion, Dr. E. L. Sturtevant, director of the New York experiment station, was invited to address the Board upon the work of the New York experiment station. The subject-matter of his address was discussed by Messrs. McDowell, Young, Secretary, Harvey, Piollet, Engle, Elsbree, Williams, Oliver, Smith, and others, and was listened to with marked attention on part of the audience.

Hon. H. N. WILLIAMS, of Towanda, then read an essay on "Taxation as it Affects other Industries." The subject of the essay called out discussion from Gov. Pattison and Messrs. Harvey, Herr, Foresman, Piollet, and Secretary.

On motion of the SECRETARY, seconded by Mr. PIOLLET, the session was extended for half an hour, and Mr. L. B. SPEAKER, member from Sullivan, read an essay on "Potatoes and Potato Culture." After the discussion following the reading of the essay, adjourned to meet as per programme.

THURSDAY AFTERNOON, *June 18, 1885.*

Board called to order at 2, p. m., by Hon. R. E. PATTISON in the chair.

EASTBURN REEDER, member from Bucks, read an essay on "Poultry as a Source of Profit on the Farm." After a full discussion of the points of Mr. Reeder's essay by Messrs. Barnes, McDowell, Young, Piollet, Oliver, and Secretary, Hon. B. LAPORTE read an essay in answer to the question, "What can the Government do to aid the Farmer?"

J. Andrew Wilt, secretary of the Bradford County Agricultural Society, read an essay on "Then and Now; or the Past and Present in Agriculture."

After reading essays by John McDowell, member from Washington, on "The Best Breed of Sheep for Profit," and by F. K. Patterson, member from Warren, on the "Tramp in his Legal Aspect," and an address on "Thoroughbred Stock for the Farmer," by Emory Davis, member from Warren, Mr. BARNES, of Lehigh, offered the following:

WHEREAS, At our annual meeting held at Harrisburg, January, 1885, Col. Victor Piollet extended a hearty and sincere invitation to the State Board of Agriculture to meet at Towanda, at the time of the summer meeting; this invitation was unanimously accepted by the members of the Board. The Board has, in accordance with this invitation met here, and when I say that it has been good and profitable for us to have been here, I not only express my own conclusion, but also the unanimous decision of all the members present;

Whereas, Our welcome has been so real and hearty, our stay so agreeable and pleasant, and so much encouragement given by the attendance of the citizens, agriculturists, and representatives of agricultural clubs, &c., from this and adjoining counties, and also from a part of New York State bordering on Pennsylvania; therefore,

Be it resolved, That we herewith tender to the Hon. Victor Piollet, H. L. Scott, and the members of this county and others, who have in any way aided or assisted them in their successful efforts to provide a comfortable place to hold our meetings and in otherwise providing for our comfort and pleasant stay during the time of our meeting, and also to the various citizens who furnished essays, and to all who took an active part in the different subjects of discussion presented before the Board, and also to all those who encouraged us by their presence, the ladies included, of course.

Adopted by a rising vote.

On motion, adjourned to meet at the call of the Advisory Committee.

LIST OF COUNTY AND LOCAL AGRICULTURAL SOCIETIES,

WITH NAMES AND ADDRESSES OF SECRETARIES AND DATES FOR HOLDING FALL EXHIBITIONS OF 1885.

Both days named included.

CORRECTED UP TO JULY 1, 1885.

Compiled from official reports and sources, by the Pennsylvania Board of Agriculture.

Those marked with a * are represented in the Board of Agriculture by elected members.

COUNTY.	Corporate Name or Title of Society.	Name and Address of Secretary.	Where Held.	When Held.
Adams,*	Pennsylvania State Agricultural Society,	D. W. Selter, Harrisburg,	Philadelphia,	Sept. 27-Oct. 7.
Armstrong,*	Tri-State Exhibition,	R. H. Thomas, Mechanicsburg,	Williams' Grove,	Aug. 31-Sept. 3.
Do.	Adams County Agricultural Society,	S. Witherow, Fairfield,	Gettysburg,	September 22-24.
Do.	Armstrong County Agricultural Society,	T. McConnell, Jr., Kittanning,	Kittanning,	No report.
Do.	Leechburg Agricultural and Mechanical Association,	E. Burchfield, Leechburg,	Leechburg,	No report.
Do.	Dayton Agricultural Society,	W. R. Millison, Dayton,	Dayton,	Sept. 23-Oct. 2.
Do.	Petroleum Agricultural Society,	Robert Ralph, Foxburg,	Parker's Landing,	September 22-24.
Do.	South Beaver Farmers' Club,	J. G. Mitchell, Beaver,	Beaver,	Sept. 23-Oct. 2.
Do.	Bedford County Agricultural Society,	J. S. Elder, Darlington,	Holds no fair,	No fair.
Do.	Berks County Agricultural Society,	C. T. Fox, Reading,	Reading,	October 6-9.
Do.	Keystone Agricultural Society,	W. B. Bleber, Kutztown,	Kutztown,	September 8-11.
Do.	Blair County Agricultural Society,	M. A. Young, Hollidaysburg,	Hollidaysburg,	No report.
Do.	Bradford County Agricultural Society,	J. A. Wilt, Towanda,	Towanda,	September 13-19.
Do.	Union Agricultural Association,	M. E. Lilley, Canton,	Canton,	Sept. 23-Oct. 2.
Do.	Troy Farmers' Club,	G. M. Card, Sylvania,	Troy,	September 23-25.
Do.	Bucks County Agricultural Society,	W. Wynkoop, Newtown,	Holds no fair,	September 13-17.
Do.	Doylstown Agricultural and Mechanical Institute,	N. C. James, Doylestown,	Doylstown,	No fair.
Do.	Butler County Agricultural Society,	W. P. Roessing, Butler,	Butler,	No report.
Do.	Connoquessing Valley Agricultural Society,	J. W. Phillips, Zellenople,	Zellenople,	September 13-18.
Do.	Carbon County Industrial Society,	E. Bauer, East Mauch Chunk,	Lehighinton,	September 8-11.
Do.	Centre County Agricultural Society,	H. H. Hersberger, Bellefonte,	Bellefonte,	No report.
Do.	Chester County Agricultural Society,	A. M. Eachus, West Chester,	West Chester,	September 17-19.
Do.	Oxford Agricultural Society,	T. K. Stubbs, Oxford,	Oxford,	September 23-25.
Do.	Octorara Agricultural and Horticultural Society,	D. H. Branson, Arglen,	Arglen,	No fair.
Do.	Westgrove Farmers' and Gardeners' Club,	M. Conard, West Grove,	Holds no fair,	No fair.
Do.	Octorara Farmers' Club,	D. H. Branson, Arglen,	Holds no fair,	No fair.
Do.	Clarion County Agricultural Society,	C. V. Reid, Clarion,	Clarion,	September 13-18.
Do.	Clearfield County Agricultural Society,	A. Walters, Clearfield,	Clearfield,	No fair.
Do.	Clinton County Agricultural Society,	H. W. Brown, Cedar Springs,	Holds no fair,	No fair.
Do.	Columbia County Agricultural Society,	H. V. White, Bloomsburg,	Bloomsburg,	October 14-17.
Do.	North Columbia and South Luzerne Agricultural Asso.,	C. C. Evans, Berwick,	Berwick,	Sept. 30-Oct. 1.
Do.	Benton Agricultural Society,	J. S. Kline, Benton,	Benton,	No report.

COUNTY AND LOCAL AGRICULTURAL SOCIETIES—Continued.

COUNTY.	Corporate Name or Title of Society.	Name and Address of Secretary.	Where Held.	When Held.
Crawford,*	Crawford County Agricultural Society.	R. B. Myers, Conneautville.	Conneautville.	Sept. 30—Oct. 2.
Do.	French Creek Valley Agricultural Society.	J. H. Adams, Conneautville.	Conneautville.	Sept. 23-25.
Do.	Central Agricultural Society.	A. McMichael, Meadville.	Meadville.	No report.
Do.	Oil Creek Valley Agricultural Society.	J. B. Bramhill, Centreville.	Centreville.	September 22-25.
Cumberland,*	Cumberland County Agricultural Society.	L. F. Lyne, Carlisle.	Carlisle.	Sept. 29—Oct. 2.
Do.	Cumberland County Horticultural Society.	E. C. Gardner, Mechanicsburg.	Mechanicsburg.	No fair.
Dauphin,*	Dauphin County Agricultural Society.	W. H. H. Selg, Steelton.	Harrisburg.	No fair.
Do.	Graft Agricultural Association.	J. Hoffman, Lykens.	Gratz.	September 22-25.
Do.	Upper Dauphin Agricultural Society.	J. M. Ferree, Millersburg.	Millersburg.	No report.
Do.	Upper Dauphin Poultry Association.	J. S. Fennel, Lykens.	Lykens.	No report.
Delaware,*	Agricultural and Industrial Society of Delaware County.	H. C. Snowden, Media.	Media.	October 1-3.
Do.	Taxpayers' and Agricultural Society.	H. Darlington, Concord.	Holds no fair.	No fair.
Do.	Chadds Ford Farmers' Club.	A. Sharpless, West Chester.	Holds no fair.	No fair.
Do.	Erle County Agricultural Society.	G. A. Evans, West Mill Creek.	Erle.	September 22-25.
Do.	Central Agricultural Society of Union City.	H. A. Sweet, Union City.	Union City.	No report.
Do.	N. W. Agricultural Association.	H. A. Porter, Cory.	Cory.	Sept. 29-Oct. 2.
Fayette.	Fayette County Agricultural Society.	R. F. Hopwood, Uniontown.	Uniontown.	October 6-8.
Fulton.	Fulton County Agricultural Society.	J. W. Greathouse, McConnellsburg.	McConnellsburg.	Not fixed.
Greene.	Greene County Agricultural and Manufacturing Society.	G. W. Dougherty, Carmichaels.	Carmichaels.	No report.
Do.	Central Fair Association.	J. D. Lindsey, Waynesburg.	Waynesburg.	No report.
Do.	Sandy Plains Fair Association.	J. McGlumpley, Wind Ridge.	Jacksonville.	No report.
Do.	Greene County Stock Association.	D. F. S. Blackley, Clarksville.	Clarksville.	No fair.
Do.	Huntingdon County Agricultural Society.	J. K. Bailey, Jr., Khedive.	Huntingdon.	No report.
Do.	Indiana County Agricultural Society.	W. W. Moore, Huntingdon.	Indiana.	Sept. 23-Oct. 2.
Do.	Jefferson County Agricultural Society.	J. T. Stuchul, Indiana.	Brookville.	September 23-25.
Do.	Punxsutawney Agricultural Society.	R. M. Matson, Brookville.	Punxsutawney.	September 16-19.
Do.	Junata County Agricultural Society.	W. P. Hastings, Punxsutawney.	Port Royal.	October 7-9.
Lackawanna,*	Lackawanna County Agricultural Society.	J. P. Wharton, Port Royal.	Seranton.	September 22-25.
Do.	North Lackawanna Farmers' Association.	D. W. Jones, Seranton.	Waverly.	No fair.
Do.	South Abington Farmers' Club.	J. L. Stone, Waverly.	Holds no fair.	No fair.
Do.	Lancaster County Agricultural Society.	J. L. Stine, Waverly.	Holds no fair.	No fair.
Do.	Lawrence County Agricultural and Horticultural Society.	M. D. Kendig, Creswell.	Lancaster.	September 15-18.
Do.	Lebanon Valley Agricultural Association.	W. T. Long, Lancaster.	New Castle.	No fair.
Do.	Lebanon County Agricultural Society.	W. F. Leathers, New Castle.	Harlansburg.	No report.
Do.	Lehigh County Agricultural Society.	C. R. Lantz, Lebanon.	Lebanon.	September 15-18.
Do.	Luzerne County Agricultural Society.	L. P. Hecker, Allentown.	Allentown.	Sept. 27—Oct. 1.
Do.	Luzerne County Agricultural Society.	J. B. Law, Wyoming.	Wyoming.	October 6-9.
Do.	Lycoming County Agricultural Society.	W. H. Jenkins, Wyoming.	Williamsport.	No fair.
Do.	Muncy Valley Farmers' Club.	J. B. Coryell, Williamsport.	Holds no fair.	No fair.
Do.	McKean County Agricultural Society.	O. L. Snyder, Port Allegheeny.	Port Allegheeny.	No report.
Do.	Mercer County Agricultural Society.	J. B. Hines, Stoneboro.	Stoneboro.	Sept. 23—Oct. 1.
Do.	Mercer Central Agricultural Society.	W. J. McKean, Mercer.	Mercer.	September 9-11.

Mercer.	Shenango Valley Agricultural Society.	W. T. Alan, Greenville.	Greenville.	No report.
Do.	Keystone and Buckeye Agricultural Society.	T. B. Biel, Sharon.	Sharon.	September 15-18.
Do.	Millin County Agricultural Society.	W. Gambel, Jonestown.	Jamestown.	No report.
Do.	Monroe County Agricultural Society.	S. L. McKinney, Lewistown.	Lewistown.	No fair.
Do.	Montgomery County Agricultural Society.	T. M. McIlhenny, Stroudsburg.	Stroudsburg.	No fair.
Do.	Montour County Agricultural Society.	J. Rex, Upper Dublin.	Ambler.	October 7-10.
Do.	Northampton County Agricultural Society.	W. M. Gearhart, Danville.	Danville.	October 19-23.
Do.	Northampton County Agricultural Society.	N. S. Shires, Washingtonville.	Washingtonville.	No report.
Do.	Farmers' and Mechanics' Institute.	E. T. Greenwalt, Nazareth.	Nazareth.	September 16-20.
Do.	Pleasant Valley Farmers' Club.	W. G. Field, Easton.	Easton.	No fair.
Do.	Philadelphia County Agricultural Society.	P. H. Moore, Sunbury.	Sunbury.	No fair.
Do.	Germanatown Horticultural Society.	J. W. Kelsey, Milton.	Holds no fair.	No fair.
Do.	Potter County Agricultural Society.	E. Lonsdale, Germantown.	Germantown.	No report.
Do.	Schuylkill County Agricultural Society.	A. B. Mann, Coudersport.	Coudersport.	Sept. 23-Oct. 1.
Do.	Union Agricultural Association.	G. H. Yeager, Orwigsburg.	Orwigsburg.	September 13-18.
Do.	Somerset County Agricultural Society.	L. Applegate, Shenandoah.	Shenandoah.	No report.
Do.	Sullivan County Agricultural Society.	M. W. Weitzel, Selin's Grove.	Somersel.	No fair.
Do.	Susquehanna County Agricultural Society.	J. H. Fritz, Somersel.	Dushore.	September 16-17.
Do.	Great Bend Agricultural Society.	D. A. Tittsworth, Montrose.	Montrose.	September 23-24.
Do.	Farmers' Agricultural Society of Tioga County.	L. Tiffany, Harford.	Harford.	No report.
Do.	Union County Agricultural Society.	C. McKinney, Great Bend.	Mansfield.	No report.
Do.	Venango County Agricultural Society.	C. S. Ross, Mansfield.	Wellsboro.	October 7-9.
Do.	Warren County Agricultural Association.	G. E. Long, Lewisburg.	Lewisburg.	September 15-17.
Do.	Warren County Fair Association.	J. J. McLaurin, Franklin.	Franklin.	September 8-11.
Do.	Washington County Agricultural Society.	A. S. Dairymple, Warren.	Sugar Grove.	September 13-18.
Do.	Washington County Stock-Breeders' Association.	D. B. Jagger, Sugar Grove.	Warren.	Not fixed.
Do.	Wayne County Agricultural Society.	W. Cowan, Warren.	Washington.	No fair.
Do.	Wayne County Fair Association.	A. G. Happer, Washington.	Cannonsburg.	October 6-8.
Do.	Westmoreland County Agricultural Society.	T. M. Potts, Cannonsburg.	Burgettstown.	No fair.
Do.	Westmoreland County Stock-Breeders' Association.	J. B. Wilson, Washington.	Holds no fair.	No fair.
Do.	Wayne County Agricultural Society.	J. Emery, Millersburg.	Holds no fair.	No fair.
Do.	Westmoreland County Agricultural Society.	P. W. Collins, Ariele.	Honesdale.	No report.
Do.	Wyoming County Agricultural Society.	J. B. Laux, Greensburg.	Greensburg.	October 13-16.
Do.	Nicholson Agricultural Society.	J. W. Platt, Tunkhannock.	Tunkhannock.	September 16-18.
Do.	York County Agricultural Society.	N. P. Wilcox, Nicholson.	Nicholson.	No fair.
Do.	York County Agricultural Society.	E. Chaplin, York.	York.	October 6-9.

Record number.	NAME OF FERTILIZER.	NAME AND ADDRESS OF MANUFACTURER.	Moisture at 210°.	Soluble phosphoric acid.	Reverted phosphoric acid.	Insoluble phosphoric acid.	Potash.	Nitrogen.	Comparative commercial value per ton.	Record number.
9	Pure Dissolved Bone,	M. L. Shoemaker Company, Philadelphia, Pa.,	5.85	10.11	2.62	6.27	..	2.85	\$33.29	9
10	Ammoniated Fertilizer,	A. R. Brobeck, Hanover, Pa.,	3.75	..	2.11	4.61	1.45	1.03	12.55	10
11	Mart,	do.	3.55	..	..	0.45	1.10	..	1.39	11
12	Fossil Rock,	Conrad Miller, Ligonier, Pa.,	1.02	..	..	0.81	..	..	0.74	12
13	Good Enough Phosphate,	M. L. Shoemaker Company, Philadelphia, Pa.,	13.70	6.91	4.41	2.75	1.96	1.63	29.52	13
16	Ammoniated Dissolved Bone,	do.	11.10	4.70	5.93	5.07	0.97	1.41	27.53	16
17	Swift Sure Dissolved Bone,	do.	7.20	8.67	2.93	6.86	0.35	2.98	37.51	17
18	Echo Superphosphate,	do.	13.63	4.42	3.64	3.98	1.86	1.32	23.40	18
19	Ammoniated "A,"	do.	9.51	..	..	2.22	..	13.27	20.43	19
20	Twenty-Three Dollar Phosphate,	do.	9.65	5.76	1.80	3.79	2.56	1.38	23.81	20
21	Swift Sure Superphosphate,	do.	10.31	7.57	2.35	4.50	4.84	2.70	35.27	21
22	Ammoniated "B,"	do.	5.70	..	..	3.80	..	11.88	47.33	22
23	Chester Valley Phosphate,	Whann & Sellers, New Holland, Pa.,	8.90	4.30	2.50	4.85	2.30	1.22	42.23	23
24	Bethel High Grade Phosphate,	Boyer, Berkey & Co., Hollsopple, Pa.,	7.30	4.14	1.75	5.03	2.80	2.50	25.48	24
27	Ammoniated Bone Phosphate,	Susquehanna Fertilizer Company, Oxford, Pa.,	16.49	5.50	4.21	1.98	1.21	0.89	22.65	27
30	Dissolved Bone,	J. E. Tyrgert & Co., Philadelphia, Pa.,	13.40	8.40	2.63	7.83	0.15	2.23	34.67	30
33	Dissolved Ammoniated Bone,	Baugh & Sons, Philadelphia, Pa.,	13.28	3.94	6.95	4.66	0.29	2.48	31.33	33
35	Raw Bone Phosphate,	do.	1.95	4.80	4.00	5.72	0.33	1.67	26.20	35
37	Bone Phosphate,	McDowell & Co., Oxford, Pa.,	11.45	3.84	4.36	5.62	1.60	1.94	27.29	37

40	Superphosphate, ("W. S. C.")	N. J. Chemical Company, Philadelphia, Pa.,	17.40	6.13	2.35	2.16	1.95	27.42	40
41	Acidulated Fish Guano,	do.	21.30	4.34	4.38	2.11	2.34	27.06	41
42	"B. F. & B." Fertilizer,	do.	18.21	4.93	4.09	2.48	1.85	26.83	42
43	Soluble Bone Potash Phosphate,	do.	16.21	8.30	4.21	1.17	3.16	24.84	43
44	Pure Dissolved Bone,	do.	10.92	6.13	5.71	8.46	1.68	33.51	44
45	Q. and L. Phosphate,	do.	15.54	6.16	2.77	4.11	1.56	26.99	45
46	Twenty-Five Dollar Phosphate,	Baugh & Sons, Philadelphia, Pa.,	13.48	4.93	3.26	6.16	1.34	23.78	46
47	Standard Peruvian Guano,	Christian & Co., Philadelphia, Pa.,	9.56	2.91	3.55	9.83	2.32	54.10	47
48	Star Bone Phosphate,	J. E. Tyger & Co., Philadelphia, Pa.,	11.03	5.50	2.48	3.17	2.69	25.40	48
49	Star Guano,	do.	13.03	6.72	1.41	2.75	1.96	25.40	49
50	Lobos Peruvian Guano,	Christian & Co., Philadelphia, Pa.,	15.03	3.93	3.92	5.54	2.38	26.53	50
51	Ten Per Cent. Guano Substitute,	Baugh & Sons, Philadelphia, Pa.,	9.67	1.57	3.11	3.28	3.98	42.05	51
52	Guaranteed Peruvian Guano,	Christian & Co., Philadelphia, Pa.,	8.21	1.34	5.84	11.62	2.53	47.12	52
53	Raw Bone Phosphate,	Jacob Trimley, Limerick Station, Pa.,	6.8	5.97	4.31	6.82	0.56	39.45	53
54	Ravine Bone Phosphate,	do.	8.12	5.97	3.86	4.22	0.98	26.68	54
55	Raw Bone Meal,	do.	7.56			20.23		33.25	55
56	Favorite Bone Phosphate,	do.	7.48	7.82	3.67	3.20	0.74	31.54	56
57	Waring's Dissolved Bone,	Waring Fertilizer Company, Coloma, Md.,	10.90	6.45	6.15	8.50	0.54	36.90	57
58	Q. and L. Phosphate,	do.	14.66	6.69	2.40	4.04	1.59	27.24	58
59	Hubbard's Standard Phosphate,	Hubbard & Bro., Easton, Md.,	14.74	6.94	2.64	3.23	3.36	33.76	59
60	Orchella Guano,	R. A. Wooldridge & Co., Baltimore, Md.,	3.23		5.79	13.74		26.49	60
61	Complete Fertilizer, Potatoes, &c.,	J. Taylor & Co., Trenton, N. J.,	8.11	4.40	2.22	6.97	0.94	36.87	61
62	Complete Fertilizer, Wheat, &c.,	do.	9.11	2.53	5.02	9.24	2.80	37.00	62
63	Twenty-three Dollar Phosphate,	M. L. Shoemaker & Co., Philadelphia, Pa.,	5.75	5.18	1.75	3.46	3.01	22.07	63
64	Swift Sure Phosphate,	do.	12.84	5.62	4.64	4.13	4.35	35.90	64
65	Nitrophosphate,	J. J. Allen's Sons, Philadelphia, Pa.,	13.90	3.63	3.79	4.24	1.39	32.86	65
66	Popular Phosphate,	do.	17.80	3.84	5.50	5.63	1.74	23.15	66
67	Alkaline Phosphate,	do.	16.98	5.04	3.39	6.75	1.45	23.30	67
68	Phine,	Moro Phillips, Philadelphia, Pa.,	13.83	6.11	2.19	3.45	1.26	34.21	68
69	Complete Manure, (A brand,)	Mapes' Fertilizer Company, New York,	11.46	7.41	2.77	4.23	1.64	33.18	69
70	Potato Manure,	do.	10.27	6.05	5.55	1.52	0.60	30.00	70
71	Bradley's Potash Phosphate,	Bradley Fertilizer Company, Boston, Mass.,	3.50	2.22	6.43	12.10	1.14	35.11	71
72	Standard Phosphate,	Keystone Fertilizer Company, Johnstown, Pa.,	9.56	2.56	4.08	6.19	1.10	37.83	72
73	Lion Ammoniated Phosphate,	do.	12.08	8.74	3.12	1.68	0.87	26.06	73
74	Calvert Guano,	Zell Guano Company, Baltimore, Md.,	15.49	4.42	3.24	3.95	1.98	25.04	74
75	Ammoniated Bone,	do.	10.72	5.52	4.46	4.64	0.26	23.79	75
76	Edgewood, No. 1,	Home Manufacture,	11.82	6.54	2.06	3.10	0.47	31.29	76
77	IXL Ammoniated Bone Phosphate,	G. W. Miles Company, Milford, Conn.,	12.14	6.50	1.15	3.00	1.70	23.85	77
78	Superphosphate,	Jarecki Chemical Company, Erie, Pa.,	15.25	3.68	1.94	2.91	1.50	22.85	78
79	Soluble Bone Phosphate,	do.	16.75	6.65	1.80	4.87	2.27	15.08	79
80	Imperial Potato Manure,	P. S. Chappell & Co., Baltimore, Md.,	9.97	6.29	2.93	2.51	2.36	23.94	80
81	Superphosphate,	T. D. Ash & Co., Waketown, Pa.,	8.74	7.31	4.38	4.19	1.09	22.69	

ANALYSES OF COMPLETE FERTILIZERS—Continued.

Record number.	NAME OF FERTILIZER.	NAME AND ADDRESS OF MANUFACTURER.	Moisture at 212°.	Soluble phosphoric acid.	Reverted phosphoric acid.	Insoluble phosphoric acid.	Potash.	Nitrogen.	Comparative commercial value per ton.	Record number.
154	Edgewood, No. 2.	Home Manufacture.	12.67	5.30	1.57	0.88	5.49	1.86	24 21	154
155	Swift Sure Phosphate.	M. L. Shoemaker, Philadelphia, Pa.,	7.80	7.52	2.80	4.06	4.96	2.45	34 91	155
156	Ammoniated Phosphate.	W. C. Hoveler & Co., Pittsburgh, Pa.,	7.45	3.68	3.76	7.60	1.75	1.91	27 95	156
157	Smoky City Phosphate.	J. & R. Young, Pittsburgh, Pa.,	9.53	1.57	5.19	3.89	0.85	1.02	19 02	157
158	Ammoniated Bone Phosphate.	C. H. Dempwolf & Co., York, Pa.,	8.44	2.90	2.65	2.50	1.60	2.85	23 49	158
159	Ammoniated Bone Phosphate.	Maryland Fertilizer Company, Baltimore, Md.,	15.43	6.21	3.69	1.68	3.09	0.69	21 22	159
160	Ammoniated Bone Phosphate.	W. C. Newport & Co., Willow Grove, Pa.,	9.96	7.61	2.81	2.83	5.92	2.85	36 11	160
161	Ammoniated Bone Phosphate.	Mapes' Formula Company, New York,	15.68	8.26	2.81	3.93	3.06	2.52	34 53	161
162	Ammoniated Bone Phosphate.	G. Ober & Sons, Baltimore, Md.,	15.40	9.08	0.91	1.49	4.11	2.52	32 78	162
163	Ammoniated Bone Phosphate.	Chemical Company of Canton, Baltimore, Mass.,	17.24	9.74	0.88	0.33	0.22	2.01	29 72	163
164	Ammoniated Bone Phosphate.	W. Ewing, Landenberg, Pa.,	10.52	5.84	2.03	1.78	0.97	1.82	28 84	164
165	Ammoniated Bone Phosphate.	Bowker Fertilizer Company, Baltimore, Md.,	8.81	7.07	3.08	4.09	0.85	2.19	29 94	165
166	Ammoniated Bone Phosphate.	Ramsburg, Koogle & Co., Baltimore, Md.,	12.68	6.94	2.11	2.43	2.45	1.88	26 84	166
167	Ammoniated Bone Phosphate.	A. R. Brodbeck, Hanover, Pa.,	10.26	5.68	2.33	2.66	2.38	1.87	23 29	167
168	Ammoniated Bone Phosphate.	J. Horner & Co., Baltimore, Md.,	7.08	3.98	9.74	3.28	0.19	3.50	38 29	168
169	Ammoniated Bone Phosphate.	C. W. Kennard & Co., Chestertown, Md.,	15.02	4.98	5.48	2.66	2.28	0.98	24 86	169
170	Ammoniated Bone Phosphate.	H. H. & W. E. Klinefelter, Havre-de-Grace, Md.,	17.89	2.74	3.28	2.63	2.28	1.01	18 13	170
171	Ammoniated Bone Phosphate.	Zell Guano Company, Baltimore, Md.,	10.39	4.03	3.50	5.02	1.26	0.66	20 82	171
172	Ammoniated Bone Phosphate.		12.47	8.75	2.42	2.35	1.55	1.30	27 74	172

The department has just been informed that analysis No. 200, of the list of September, 1884, there given as the "Home Fertilizer," made by Slingluff & Co., of Baltimore, Md., was not made by that firm, and that they never made any fertilizer of that name or quality. We are further informed, that the person from whose stock the sample was drawn, obtained the chemicals from another firm, and after adding cheaper materials, deceived the agent of the Board by representing it as the manufacture of the above firm.

QUARTERLY REPORT.

PENNSYLVANIA BOARD OF AGRICULTURE.

GROUND BONE.

Record number	NAME OF FERTILIZER.	NAME AND ADDRESS OF MANUFACTURER.	Moisture at 212°.	Insoluble phosphoric acid.	Nitrogen.	Comparative commercial value per ton.	Record number.
2	Pure Raw Bone.	Jacob Trinley, Limerick Station, Pa.,	7.63	20.63	3.94	\$31 66	2
6	Pure Bone Meal.	Raugh & Sons, Philadelphia, Pa.,	7.59	23.97	4.43	40 55	6
8	Swift Sure Raw Bone.	M. L. Shoemaker, Philadelphia, Pa.,	5.13	20.56	5.83	41 38	8
14	Swift Sure Bone Meal.	do.	2.82	21.00	6.12	42 65	14
15	Swift Sure Ground Bone.	do.	4.58	22.72	5.35	41 52	15
26	Fine Ground Bone.	Susquehanna Fertilizing Company, Oxford, Pa.,	7.60	21.16	3.54	34 12	26
28	Fine Ground St. Louis Bone.	do.	7.71	24.02	3.57	40 36	28
32	Pure Ground Bone.	J. E. Tygart & Co., Philadelphia, Pa.,	2.60	26.73	4.07	40 19	32
36	Button Bone.	Emil Wahl, Philadelphia, Pa.,	7.61	20.78	3.69	40 04	36
38	Pure Ground Bone.	Waring Fertilizer Company, Colona, Md.,	5.92	20.78	3.81	36 83	38
48	Pure Bone Meal.	J. Gawthrop & Co., Kennett Square, Pa.,	7.61	20.95	3.91	36 02	48
53	Pure Raw Bone Meal.	Baugh & Sons, Philadelphia, Pa.,	9.09	23.90	3.81	40 33	53
60	Pure Raw Bone Meal.	Jacob Trinley, Limerick Station, Pa.,	7.56	20.23	3.81	36 83	60
63	Pure Ground Bone.	Waring Fertilizer Company, Colona, Md.,	7.07	17.46	4.40	34 39	63
70	Bone Dust.	Thompson & Edwards, Chicago, Ills.,	7.56	24.43	3.78	38 99	70
72	Button Bone.	Emil Wahl, Philadelphia, Pa.,	12.02	24.43	3.78	38 99	72
90	Ground Bone.	Lord & Polk, Odessa, Del.,	...	17.45	3.35	30 10	90
100	Philadelphia Button Bone.	Emil Wahl, Philadelphia, Pa.,	8.41	22.82	4.29	38 88	100
111	Slaughter-House Bone.	Keystone Fertilizer Company, Johnstown, Pa.,	...	23.10	3.54	36 74	111
121	Ground Bone.	Jarecki Chemical Company, Erie, Pa.,	...	19.62	3.77	33 88	121
131	Bone Meal.	Allegheny City Fertilizer Company, Pittsburgh, Pa.,	...	24.46	4.94	38 62	131
134	Ground Bone.	do.	...	22.97	3.63	32 56	134
136	Bone Meal.	W. A. Hoveler & Co., Pittsburgh, Pa.,	...	22.54	3.63	37 33	136
138	Pure Bone Meal.	Windle, Doan & Co., Coatesville, Pa.,	...	22.54	3.63	36 96	138
142	Butchers Bone.	C. H. Dempwolf & Co., York, Pa.,	...	22.54	3.63	36 96	142
150	Pure Ground Bone.	W. A. Hoveler & Co., Pittsburgh, Pa.,	...	21.97	4.34	34 03	150
153	St. Louis Bone.	Susquehanna Fertilizer Company, Oxford, Pa.,	...	21.97	4.16	35 88	153
165	Fine Raw Bone.	N. W. Fertilizing Company, Chicago, Ills.,	...	20.57	3.88	35 10	165
178	Fine Ground Bone.	W. Ewing, Landenberg, Pa.,	...	23.74	3.62	40 20	178
179	Bone Meal.	Baugh & Sons, Philadelphia, Pa.,	...	18.87	3.11	28 19	179
189	Slaughter-House Bone.	Joshua Horner & Co., Baltimore, Md.,	...	20.87	3.74	36 68	189

ACIDULATED S. C. ROCK.

Record number.	NAME OF FERTILIZER.	NAME AND ADDRESS OF MANUFACTURER.	Moisture at 212°.	Soluble phosphoric acid.	Reverted phosphoric acid.	Insoluble phosphoric acid.	Comparative commercial value per ton.	Record number.
25	Superior Rock Phosphate.	Susquehanna Fertilizer Company, Oxford, Pa.,	11.18	7.97	4.47	4.73	\$23.89	25
29	Dissolved South Carolina Rock,	McDowd & Co., Oxford, Pa.,	10.38	8.43	5.04	3.65	24.69	29
31	Acid Phosphate, Black,	Baugh & Sons, Philadelphia, Pa.,	15.37	8.37	3.64	3.78	22.40	31
34	Acidulated Bone Black,	J. E. Tygart & Co., Philadelphia, Pa.,	16.47	17.16	0.16	0.78	31.45	34
38	T. and P. Acid Phosphate,	Waring Fertilizer Company, Colona, Md.,	14.92	10.60	4.05	2.57	25.51	38
44	Acidulated South Carolina Rock,	N. J. Chemical Company, Philadelphia, Pa.,	13.98	10.90	3.06	2.65	25.58	44
64	T. and P. Acid Phosphate,	Waring Fertilizer Company, Colona, Md.,	12.93	9.87	3.76	3.63	25.23	64
74	Dissolved South Carolina Rock,	J. E. Tygart & Co., Philadelphia, Pa.,	10.91	11.02	1.42	1.12	21.56	74
77	Dissolved South Carolina Rock,	J. L. Cooper & Co., Wilmington, Del.,	10.75	4.23	7.55	4.16	21.35	77
81	Challenge South Carolina Rock,	English Manufacture,	7.06	21.14	8.23	1.92	51.99	81
84	Acid Phosphate,	Coe & Richmond, Philadelphia, Pa.,	10.13	9.25	8.64	2.96	23.70	84
89	Diamond State Soluble Bone,	do.	13.48	8.21	4.41	4.31	23.55	89
99	Dissolved South Carolina Rock,	Lord & Polk, Odessa, Del.,	12.84	9.62	2.46	4.51	22.04	99
105	Soluble Bone Phosphate,	Moro Phillips, Philadelphia, Pa.,	13.60	8.91	2.68	4.32	22.30	105
112	Powell's Dissolved South Carolina Rock,	Brown Chemical Company, Baltimore, Md.,	9.51	10.91	3.77	2.15	26.53	112
119	Dissolved Bone,	Zell Guano Company, Baltimore, Md.,	9.43	8.99	4.06	3.05	23.90	119
123	Dissolved South Carolina Rock,	J. Richmond, Philadelphia, Pa.,	6.01	9.74	5.42	1.48	26.97	123
133	Acid Rock,	N. J. Chemical Company, Philadelphia, Pa.,	3.87	9.38	4.74	3.66	25.92	133
141	Acidulated Rock,	Susquehanna Fertilizer Company, Oxford, Pa.,	10.31	9.18	5.78	1.67	26.43	141
153	Acid Phosphate,	N. J. Chemical Company, Philadelphia, Pa.,	5.18	9.17	4.87	2.83	25.42	153
180	Superior Rock Phosphate,	Susquehanna Fertilizer Company, Oxford, Pa.,	5.59	9.30	4.12	3.25	24.63	180
183	Acid Phosphate,	Coe & Richmond, Philadelphia, Pa.,	9.12	6.08	4.80	3.76	20.12	183
185	Lanvale Soluble Bone,	H. H. & W. E. Klinefelter, Havre-de-Grace, Md.,	7.48	8.18	4.95	5.04	24.66	185
186	Soluble Bone,	A. R. Brodbeck, Hanover, Pa.,	11.18	7.68	4.27	4.35	22.82	186
193	Powell's Dissolved Bone,	Brown Chemical Company, Baltimore, Md.,	8.94	9.71	4.61	3.29	26.14	193
195	Dissolved South Carolina Bone,	Chemical Company of Canton, Baltimore, Md.,	8.94	9.71	4.61	3.29	26.14	195

This list of analyses will conclude the work of Prof. W. H. Jordan as chemist of the Board, he having forwarded his resignation to take effect June 15. At meeting of the executive committee held June 17, Prof. F. A. Genth, of the University of Pennsylvania, was elected chemist of the Board. All complaints relating to the correctness of the analyses, should be sent to him at West Philadelphia, Pa. All complaints as to the correctness of the samples should be addressed to the secretary of the Board at Harrisburg, Pa. Attention to these suggestions will prevent vexatious delay to correspondents.

The attention of manufacturers and agents for the sale of fertilizers is called to the fact that all licenses expire July 31, and that any sales effected previous to the renewal of the license will render both manufacturer and agent liable to the full penalties of the act of June 28, 1879.

QUARTERLY REPORT.

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